Report to the Congress: **Medicare Payment Policy**

Volume II: Analytical Papers

March 1998

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Acknowledgements

When the Medicare Payment Advisory Commission held its first meeting in October 1997, it seemed inconceivable that its first report could be ready in just four months. Drawing on the work of its predecessors, together with the energy and enthusiasm about this new venture, the March report is now a reality.

This feat would not have been possible without the support and contributions of many individuals, both in Washington and around the country. Staff of the Congress, the Health Care Financing Administration (particularly the Enterprise Databases Group) and other agencies of the Department of Health and Human Services, the Congressional Budget Office, the Congressional Research Service, and the General Accounting Office provided invaluable information and advice.

The Commission has been fortunate to work with people who have consistently understood and responded to its needs in key areas. Social and Scientific Systems— especially Arlene Turner, Valerie Aschenbach, Jeff McCartney, Rosanne Russillo, Daksha Damera, Paul Menick, Charles Thomson, and Deborah Johnson— have superbly met the challenges posed by the Commission's diverse programming needs. Lynn Lewis has helped the staff convey complex and technical concepts in an effective manner. Franek Design Associates, Inc. contributed by giving the Commission's report its own distinctive design and shepherding the report through the production process.

The Commission's work on vulnerable populations was greatly advanced by the expert panel convened by Mathematica Policy Research. Marsha Gold, Robert Hurley, and Jessica Mittler were instrumental in arranging the panel. Thanks go to Susan Aldrich, Allan Bergman, Irene Fraser, Sandra Harmon-Weiss, Carter Marshall, Robert Master, Glen Rosselli, Paul Saucier, Mervin Shalowitz, Steven Somers, Craig Thornton, Carol Tobias, James Verdier, and Edward Wagner for their participation on the panel.

Others who have put their mark on this report include David Colby, who served as deputy director until December 1997, and Don Young, who served as co-executive director through October 1997. Another former staff member, Karen Fisher, also made important contributions. A number of other people played an important role in Commission activities during the past year. For their efforts, special thanks go to Anil Bamezai, Robert Bergmann, Tom Bradley, Al D'Alberto, Anthony Dreyfus, Cindy Dudzinski, Frank Eppig, Donna Farley, Beth Fuchs, David Gibson, Sheridan Gladhill, David Glass, Liz Mauser Goldstein, Leonard Gruenberg, Mel Ingber, Ann Iversen, Terry Kay, Richard Kronick, Ken Leong, Susan Levy, Joyce Mann, Joseph Martin, Clare McFarland, Sharon McIlrath, Steve Miller, James O'Keiff, Madeleine Smith, Don Thompson, Cynthia Tudor, Christine van Reenen, and Janet Wellham.

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Foreword

This is the first major report of the Medicare Payment Advisory Commission. The Commission began its work in October 1997. In conducting analyses and developing recommendations, we have drawn upon the experiences and work of our predecessors, the Physician Payment Review Commission and the Prospective Payment Assessment Commission, while shaping the agenda for this new body.

This report focuses on Medicare payment policy. Chapters consider all of the major payment issues facing the program, including those related to the Medicare+Choice program, fee-for-service policies affecting a variety of providers, service to special populations, and financing of graduate medical education. The Commission's June report will take on other policy issues concerning Medicare and its relationship to the broader health care system.

The Commission presents its work in two volumes. Volume I contains all of the Commission's recommendations as well as the rationales behind them. Volume II includes analytic papers that generally relate to the recommendations in Volume I. In some cases, these provide more detail on methods. In others, they provide supporting background information. We are hopeful that this approach will be satisfying and useful to the Congress and to others in the policy community and practice environment who rely on the Commission's work.

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Chapter 1

Medicare's Capitation Payments to Private Health Plans: Sample Calculations and Simulation Methods

Chapter 1

Medicare's Capitation Payments to Private Health Plans: Sample Calculations and Simulation Methods

The Balanced Budget Act of 1997 (BBA) (P.L. 105-33) completely restructured the method for calculating Medicare's capitation rates for paying health plans. It applies immediately to plans in the Medicare risk program and will apply to plans in the newly created Medicare+Choice program as it replaces the risk program in late 1998 and 1999. The new system includes changes designed to reduce the volatility in county payment rates from year to year and the variation in rates across the country. Reduced volatility and variation are in turn intended to encourage more participation by health plans and beneficiaries.

In Volume I, Chapter 2, the Medicare Payment Advisory Commission describes the method for determining the capitation rates at which health plans are paid and makes several recommendations for technical corrections to the payment method established in the BBA. That chapter also included analysis of the impact of the changes made by the BBA.

This chapter includes three types of supporting material. It is designed to help the reader understand better how the new payment rates are calculated and how different parts of the system interact—but not to offer additional impact analysis. First, the chapter provides examples of how rates are calculated. Second, it uses examples to illustrate interactions among the policies underlying the three different rules established as part of the new legislation. Finally, it documents in some detail the simulation model used by the Commission to estimate payment rates under the new rules.

Calculating County Payment Rates

The new method of setting county payment rates is being implemented, starting in 1998, to pay private health plans that contract with Medicare. The methodology is built on three basic rules. First, the method blends the 1997 local county rates calculated under the old system with an adjusted national rate in proportions that shift over six years to a 50:50 local-national blended rate (see Table II-1-1 for specific parameters on these and other rules). Second, counties are guaranteed a minimum increase of 2 percent over their previous year's rate. Third, rates must meet a minimum or floor rate that is set by law in 1998 and goes up each year. Each county's monthly payment rate is set as the highest of the three rates calculated from these three rules. The law also requires that payment rates be adjusted for budget neutrality to ensure that total payments under the new system equal those that would have made based on local payments only. This section describes and illustrates, using several sample counties, how county payment rates are calculated.[1]

[1] The term county, as used here and elsewhere, includes independent cities such as St. Louis, Baltimore, and numerous Virginia cities.

Table II-1-1

Parameters in the Balanced Budget Act for Calculating Medicare's Payment Rates to Health Plans, 1998-2003

Year	Blended-Rate Proportions		Floor Rate	Percentage of Graduate Medical Education Payments Removed	National Growth Percentage
	Local	National			
1998	90%	10%	$367	20%	2.6%
1999	82	18	381 *	40	3.9 *
2000	74	26	398 *	60	4.5 *
2001	66	34	420 *	80	5.4 *
2002	58	42	445 *	100	5.9 *
2003	50	50	477 *	100	7.2 *

SOURCE: Medicare Payment Advisory Commission analysis of payment rate methodology under the Balanced Budget Act of 1997.

*Based on Congressional Budget Office projections, January 1997 baseline, with changes resulting from the Balanced Budget Act of 1997.

Table II-1-2

Illustrative Calculation of Medicare's Monthly Payment Rates for Sample Counties, 1998

County	Preliminary Calculation of Payment Rate Under Separate Rule				Final Calculation of Payment Rate	
	1997 Actual Rate	Minimum Update	Floor	Blended Rate (90:10)	Before Budget-Neutrality Adjustment	Actual Rate (After Budget-Neutrality Adjustment)
Dade, FL	$748.23	$763.19	$367.00	$737.10	$763.19	$763.19
Los Angeles, CA	622.55	635.00	367.00	625.92	635.00	635.00
San Francisco, CA	525.90	536.42	367.00	536.83	536.83	536.42
Hennepin, MN	405.63	413.74	367.00	419.34	419.34	413.74
Waupaca, WI	286.17	291.89	367.00	307.67	367.00	367.00
Arthur, NE	220.92	225.34	367.00	244.89	367.00	367.00

SOURCE: Medicare Payment Advisory Commission analysis of payment rates under the Balanced Budget Act of 1997.

NOTE: The first step is the calculation of three rates for each county, corresponding to the three rules in the Balanced Budget Act of 1997. Initially, each county's rate is the highest of the three rates. The budget-neutrality adjustment is then applied to rates set by the blended-rate rule. In 1998, the budget-neutrality adjustment lowered all blended rates so that they were no higher than the minimum update or floor rates. As a result, rates for Hennepin and San Francisco Counties were set by the minimum-update rule instead of the blend rule.

The first step in determining payment rates is to calculate three separate rates for each county: minimum-increase rate, floor rate, and blended rate (see Table II-1-2). Two of these calculations are simple. The *minimum increase* for all counties is 102 percent of the previous year's payment rate. The 1998 *floor rate* for all counties (other than territories) is $367.[2]

Calculation of the *blended rate* is more complex. The blended rate for 1998 is the sum of 90 percent of the local rate and 10 percent of the input-price-adjusted national rate. For each county, the *local rate* for 1998 is based on the county's 1997 rate, reduced by 20 percent of the county-specific proportion of Medicare spending that is attributable to graduate medical education (GME) and then increased by the 1998 national growth percentage (2.6 percent).[3] The *national rate* is calculated as an average, weighted by the number of beneficiaries in each county, of the local rates for all counties. Before blending, the national rate is adjusted by a county-specific input-price adjuster that is derived (according to a formula in the law) from the price adjusters used for Medicare's physician and hospital payments.

[2] The BBA sets the floor rate for territories at the lower of $367 or 150 percent of the 1997 rate.

[3] The value of 2.6 percent was based on projected Medicare growth per capita of 3.4 percent, minus a reduction in law of 0.8 percentage points.

Initially, each county's rate is the highest of the three rates: the minimum increase, the floor, and the blended rate. For the sample counties in Table II-1-2, there are two counties whose rates are determined by each rule. The *budget-neutrality adjustment* is then applied to those counties with rates set by the blended-rate rule (Hennepin and San Francisco Counties in Table II-1-2). The law requires that rates never fall below those set by the other two rules. This adjustment is calculated to ensure that total payments under the new payment method equal total payments based on the rates that would have resulted if all counties used their local rates (that is, 1997 rates, excluding payments for GME and increased by the national growth percentage).

For 1998, the budget-neutrality adjustment caused blended rates for all counties to be lowered the maximum amount possible, to either the county's minimum-increase or its floor amount. The adjustments that would have been necessary to achieve budget neutrality would have reduced rates below the minimum-increase or floor amounts for these counties. The Commission has recommended changing the law to ensure that budget neutrality can always be achieved (see Volume I, Chapter 2).

For the sample counties in Table II-1-2, the budget-neutrality adjustment caused monthly rates for Hennepin and San Francisco to be reduced by no more than 1.5 percent of their payment rates. Had the adjustment been smaller, rates for these counties would have been set between the blended-rate and minimum-increase amounts.

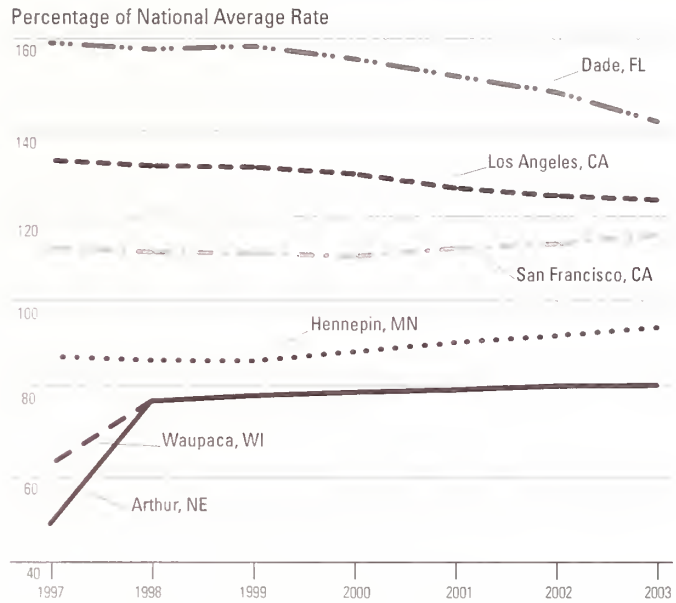
In 1999, the minimum-increase amount will be calculated from the 1998 rates, but the local and national components of the blended rate will be calculated from the 1997 rates—with two years of increases for national growth and further phasing in of the blend percentages and the GME exclusion. The 1999 floor rate will be set at the 1998 floor, increased by the national growth percentage. Using estimates of future levels of the national growth percentage, rates can be calculated from the same methodology through 2003, as the various changes are phased in (see Figure II-1-1).

The Effects of the Three BBA Rules on County Rates

The three rules established by the BBA each affect the distribution of payments across counties. The blended-rate rule can be characterized as the core of the system, working to shift from rates based only on local fee-for-service spending patterns to rates based in part on national average spending. The floor-rate and minimum-update rules were designed to modify the effect of this core policy, either speeding up the increases or tempering the reductions. The rules in combination were designed to reduce volatility and variation in payments.

Figure II-1-1

Calculation of Medicare's Monthly Payment Rates for Sample Counties, 1997-2003



SOURCE: Medicare Payment Advisory Commission simulations of payment rates under the Balanced Budget Act of 1997

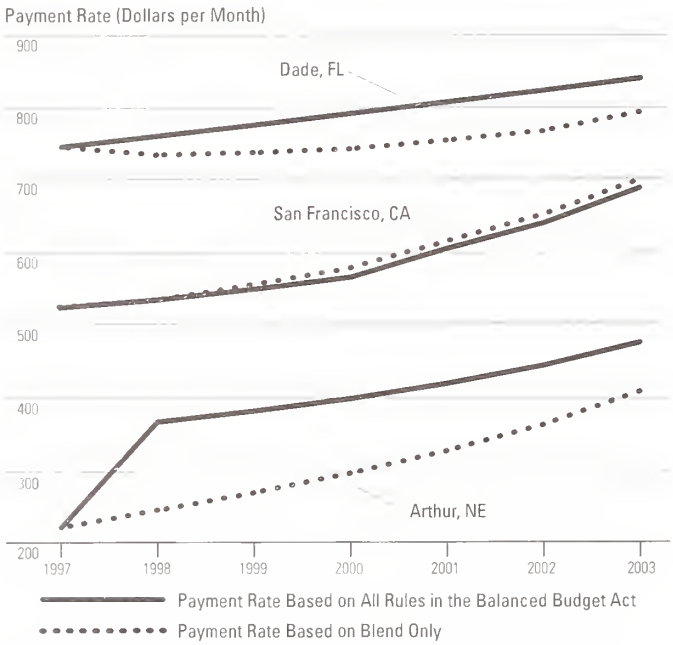
NOTE: Analysis based on actual rates for 1998 and simulated rates for 1999 through 2003.

The interaction of the three rules is complex, particularly because of the county variation in input-price adjusters and the magnitude of GME payments. As a result, it can be misleading to characterize their effects in simple terms. For example, many minimum-update counties are large urban counties where payments have historically been high. As a result, some have assumed that the minimum-update rule serves to protect only these counties. Although this may be the most common pattern, the minimum update also protects some rural or urban counties with modest payment rates but a high proportion of GME expenses included in their base rates.

In addition to the system's complexity, there are trade-offs inherent in applying the three rules simultaneously. The higher county rates dictated by applying the floor and minimum-update rules are financed by lower rates elsewhere, creating a set of winners and losers relative to a system based only on blended rates. In considering future changes to the rate structure, it is important to understand these interactions.

Figure II-1-2

Comparison of Simulated Medicare Payment Rates with Blended Rates, Selected Counties, 1997-2003



SOURCE: Medicare Payment Advisory Commission simulations of payment rates under the Balanced Budget Act of 1997

NOTE: Analysis based on actual rates for 1998 and simulated rates for 1999 through 2003.

This section illustrates how these rules interact. It first looks at three of the sample counties described in the previous section to compare how the floor rate and minimum increase, as well as the budget-neutrality requirement, change the rates from what they would have been if based on the blended-rate rule alone. The following three subsections focus successively on each of the three rules, using sample counties with rates based primarily on that particular rule. (Because the actual rule that determines the rate for a particular county often varies from year to year, these examples are counties where one rule predominates.) This analysis is based on simulations that use 1998 actual rates and rates estimated for 1999-2003 based on Congressional Budget Office (CBO) projections.[4] The results are sensitive to assumptions about spending and enrollment growth, as discussed below.

Overall Comparison

One way to illustrate how the new payment method works is to compare rates based on blended rates only with those resulting from applying the full system established by the BBA, which includes floors and minimum updates. In general, this analysis demonstrates how much higher some county rates are set because of the floor and minimum-update rules and how much the rates for blended-rate counties are reduced to maintain budget neutrality as closely as possible. The sample counties used here and in the following sections were selected to illustrate a variety of effects and to include different county characteristics.

The first illustration uses three of the sample counties described in the previous section (see Figure II-1-2). In Dade County, the 2 percent minimum update raises the payment above its blended rate. In the absence of the minimum update, rates would remain at or below 1997 levels for two or three years. This reflects the combined effect of three factors: high local rates blended with the lower national average rate, the exclusion of relatively large GME payments, and relatively low national growth percentages. By contrast, Arthur County, Nebraska, which had the lowest 1997 rate in the country, received the greatest increase due to the floor rate. The third example, San Francisco County, illustrates the reduction that occurs for a blended-rate county in order to achieve budget neutrality. These reductions are relatively modest, in part because the 2 percent minimum increase prevents the full reductions that would be necessary to achieve budget neutrality (see Volume I, Chapter 2).

Minimum-Update Counties

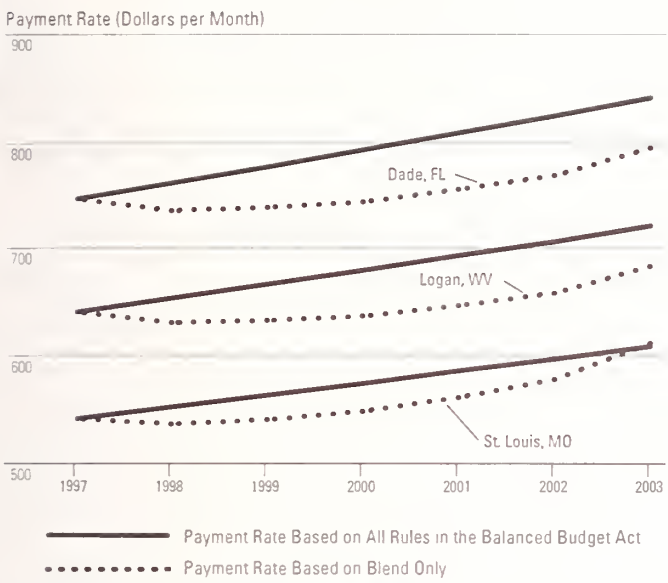
Counties where rates are based primarily on the minimum-update rule differ on several characteristics, as illustrated by the sample counties (see Figure II-1-3). Monthly payment rates in the three sample counties vary by about $200. In addition, two are central urban counties and one is rural. Not surprisingly, St. Louis City, which had a lower 1997 rate than the other two counties, receives a smaller gain above its blended rate from the guaranteed 2 percent increase. In fact, in 2003, the blended rate for St. Louis exceeds the minimum update.

Beyond the application of the three rules, two other differences among counties affect the rates, as illustrated by the sample counties. First, the proportion of spending attributable to GME varies. Based on data from the Health Care Financing Administration (HCFA), GME represents 8.7 percent of spending in St. Louis, compared with 3.5 percent in Logan County and 1.9 percent in Dade County. Had the proportion in Dade been higher, for example, the gap between the actual rate and the blended rate would have been greater. Second, levels of input-price adjusters also vary by county. The value for Dade is 1.03, compared with 0.94 in St.

[4] CBO estimates of spending growth are taken from the January 1997 baseline, as adjusted by CBO for changes enacted in the BBA. HCFA's preliminary estimate of the 1999 national growth percentage, announced January 15, 1998, is 2.0 percent, well below the 3.9 percent estimated using this CBO baseline. CBO's January 1998 baseline, released as this report was going to press, makes modest changes—some up and some down—in projected national growth percentages. Results of simulations using these revisions include lower rates in all years and an increased likelihood that blended rates will be effective first in 2001, rather than in 2000. These results, however, are preliminary

Figure II-1-3

Comparison of Simulated Medicare Payment Rates with Blended Rates, Selected Counties with Rates Based Mostly on the Minimum Update, 1997-2003

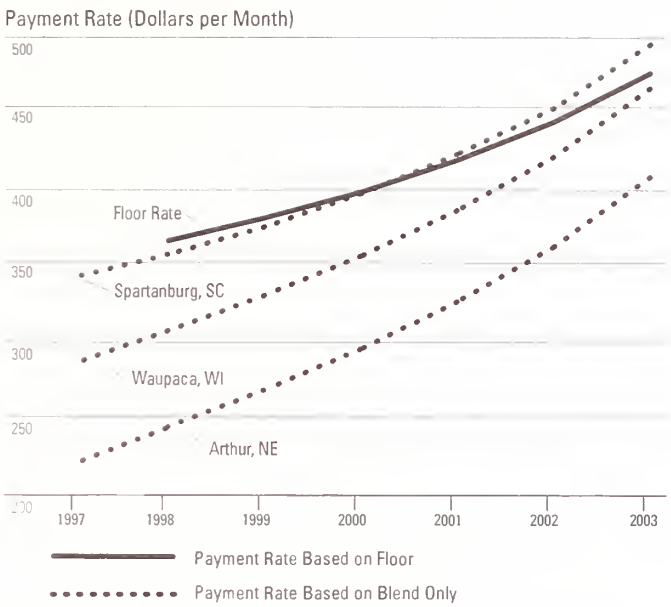


SOURCE: Medicare Payment Advisory Commission simulations of payment rates under the Balanced Budget Act of 1997.

NOTE: Analysis based on actual rates for 1998 and simulated rates for 1999 through 2003.

Figure II-1-4

Comparison of Simulated Medicare Payment Rates with Blended Rates, Selected Counties with Rates Based Mostly on the Floor, 1997-2003



SOURCE: Medicare Payment Advisory Commission simulations of payment rates under the Balanced Budget Act of 1997.

NOTE: Analysis based on actual rates for 1998 and simulated rates for 1999 through 2003.

Louis and 0.91 in Logan. The lower-than-average input-price adjuster and high GME spending for St. Louis combine to keep the blended rate low.

A comparison of the two counties with the highest rates in the country (one of which is not shown in Figure II-1-3) illustrates this point further. Richmond County, New York (Staten Island), had a 1997 payment rate similar to that in Dade. But it has a much higher level of GME spending (13.4 percent) and a much higher input-price factor (1.26). Excluding GME payments lowers the payment in Richmond, but the input-price factor raises it. Thus, under the rules in the BBA, these two factors offset each other, so that Dade and Richmond would have similar blended rates in 2003. By contrast, should the blend proportions be shifted further toward national rates in the future (after the GME exclusion is complete), Dade's rate would fall far below Richmond's because of its lower input-price factor.

If the annual national growth percentage stays above 2 percent, the blended rates for counties in this category will eventually surpass the minimum-update amounts, as occurs in St. Louis in 2003. With an annual national growth percentage in the range of 5 percent to 6 percent, the effect of the minimum update would be gone in 2005.

Floor-Rate Counties

The second set of examples includes counties where the 1998 blended rate is below the floor rate (see Figure II-1-4). The three counties in this example start at different levels. But rates for all three were raised to $367 in 1998. Because all these counties are below the national average, the phasing in of the blend proportions gradually moves their blended-rate amounts upward.[5] For Spartanburg County, South Carolina, the blended rate is projected to surpass the floor as of 2001, after which payment is set at the blended rate. For Waupaca County, Wisconsin, it is projected to stop just short of doing so in 2003.

Both the blended rate and the floor rate are updated annually by the same national growth percentage. As a result, rates for Waupaca and Arthur Counties are projected to remain at a floor rate—above their blended rates—beyond 2003, unless the Congress makes a further change in the payment rate methodology.

[5] Most of the counties in this category also have input-price factors below 1.0, so they would remain below the national average even if the blend shifted all the way to 100 percent national rates.

Blended-Rate Counties

The third set of examples includes counties where rates are based mostly on the blend (see Figure II-1-5). In these cases, the final rates are reduced to meet budget neutrality. With the higher national growth percentages currently projected for 2002 and 2003, the reduction attributable to budget neutrality is only about $5 per month in 2003, after being about triple that amount when the gap is widest. The reduction for budget neutrality also gets smaller over time because there are fewer counties where the floor rate or minimum update is applicable.

For two of the sample counties (Westchester and San Francisco), the blended-rate rule raises rates even though these counties are already above the national average rate. This result occurs because these counties have input-price adjustment factors that are well above average (1.25 and 1.26, respectively).

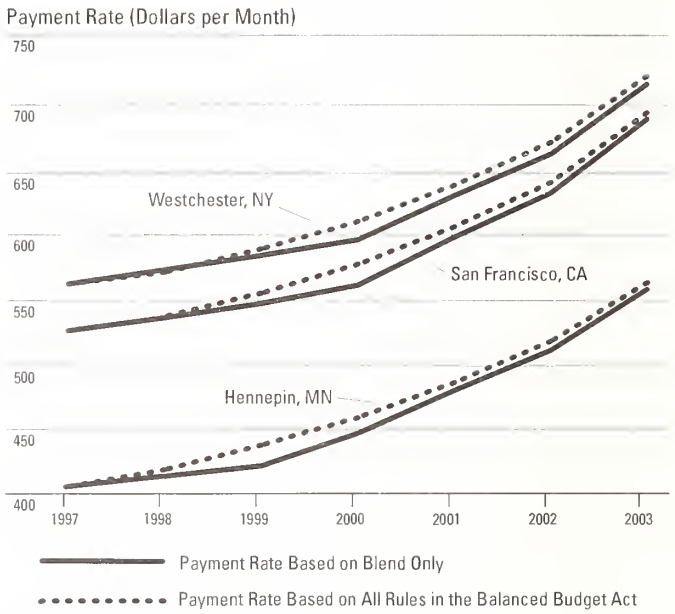
Methodology for Simulating County Payment Rates

Simulations were used during congressional deliberations to help evaluate the impact of new rules for setting payments to health plans. The staff of the Physician Payment Review Commission (PPRC) worked closely with the Congressional Research Service (CRS) and the Congressional Budget Office to provide this analytic support to the Congress.[6] CRS provided timely, county-level estimates of payment rates under alternative proposals based on a model in which the number of beneficiaries enrolled in each county remains as it was in 1996. CBO scored proposals, however, under the assumption that the program will continue to grow at different rates across the nation. PPRC developed a new model that shifts the number of beneficiaries enrolled in each county over time. Referred to as the dynamic model, it generally assumes higher enrollment for any county with an above-average payment rate increase or an existing trend of rapidly growing enrollment. These enrollment assumptions are detailed below. The dynamic model was designed primarily to help the Congress anticipate whether specific legislative proposals could be implemented in a budget-neutral manner if growth occurs as anticipated by CBO.

This section discusses the use of simulations in the analysis of different approaches for calculating county-level payments to health plans. It serves to document PPRC's dynamic simulation model, which was used to analyze payment rates for both congressional deliberations and this report.

Figure II-1-5

Comparison of Simulated Medicare Payment Rates with Blended Rates, Selected Counties with Rates Based Mostly on the Blend, 1997-2003



SOURCE: Medicare Payment Advisory Commission simulations of payment rates under the Balanced Budget Act of 1997

NOTE: Analysis based on actual rates for 1998 and simulated rates for 1999 through 2003.

Payment Simulation Models

Simulation models are a tool for providing estimates suggestive of the payment rates that will prevail under alternative legislative proposals. These estimates are important for determining the cost implications of each approach, including distributional consequences at the county level. Simulations also provided a test of whether budget neutrality—a requirement of most proposals—could be achieved and the effect on county rates of doing so.

Historically, estimates of alternative policies have been based on static models that take as fixed the distribution of plan enrollees across counties. During consideration of Medicare reforms in 1995, analyses of alternative models conducted by both congressional advisers and the Administration were based on static models. Static-model estimates are imprecise because they do not reflect changes in enrollment that are likely to occur. Recent growth in the Medicare risk program in some areas is quite high. The assumption in static models that the geographic distribution of enrollment will remain unchanged is therefore both unrealistic and

[6] This section is based on model building and analysis done by the Physician Payment Review Commission for the Congress during its deliberations on the Balanced Budget Act. PPRC provided assistance to the Congress on these matters in both 1995 and 1997. The dynamic simulation model was developed in 1997 to make simulation results more accurate by having the model reflect a behavioral response to payment changes.

inconsistent with CBO's framework for establishing the costs of alternative proposals. In addition, changes in payment policy are likely to affect plan offerings and, in turn, beneficiary enrollment decisions.

Even if enrollment were not growing as rapidly as it is currently, a change in payment policy is likely to change enrollment rates in different areas. To make estimates that are more suggestive of how a particular policy is likely to work over time, it was necessary to make some assumptions about changes in enrollment.

The main value of a dynamic model is to determine whether a particular proposal for changing risk-plan payments could be budget-neutral, given the likely changes in enrollment over the budget period. For example, a policy of payment floors would be scored by CBO as not adding costs if it applies primarily in counties that currently have no enrollment. Under a dynamic model, raising payment to a floor rate may trigger subsequent enrollment that adds costs relative to current rates. The specific assumptions about enrollment growth affect both projected spending under alternative proposals and county-level rates.

Assumptions Underlying the Dynamic Model

The key assumption for the dynamic model involves how enrollment will change in response to different policies. The research literature provides little consensus about how plans and beneficiaries are likely to respond to changes in payment rates and benefit offerings (PPRC 1997). As a result, CBO and PPRC developed general rules to describe likely aggregate effects of enrollment growth and policy changes. These rules were designed mostly to provide a rigorous test of whether budget neutrality could be achieved. As such, they make relatively simple, but extreme enrollment-growth assumptions. More modest assumptions about enrollment growth could be used to see how sensitive the results are to these assumptions.

First, counties with extraordinary payment increases (such as some floor counties) are assumed to have rapid enrollment growth regardless of current enrollment levels, most of which are now close to zero. After a one-year lag for plans to sign contracts and start enrolling beneficiaries, these counties were assumed to achieve moderately high enrollment over a two-year period.[4]

Second, other counties with above-average payment increases are assumed to have enrollment growth that exceeds their recent trend growth. In these counties, future growth is set at the product of recent growth rates and the rate of increase in payments. This assumes up to a 1 percent enrollment increase for every 1 percent increase in payment, above and beyond trend enrollment growth.[5]

Furthermore, remaining counties with payment increases are assumed to continue their recent enrollment-growth trend. Counties with no payment increases are assumed to have zero enrollment growth. In no case is a county's enrollment allowed to surpass an upper-bound enrollment level.

How Dynamic Models Affect County-Level Payment Rate Estimates

The results of static and dynamic models differ only because of the budget-neutrality requirement, which is the only component of the calculation to involve the number of plan enrollees. The estimates differ for several reasons, a result that can be critical when comparing different proposals for payment rate changes. First, the distribution of enrollees across counties with different payment rates affects the size of the baseline budget, that is, the total expenditures for which the budget-neutrality comparison is made. Each year, the baseline budget is set as the product of the number of enrollees and the local payment rate (before blending or other calculations), summed across counties.

Since the distribution of beneficiaries changes under the dynamic model, the baseline budget changes. For example, if there is a net shift of enrollment toward counties with lower local rates, the budget becomes smaller. Projected spending as a result of payment changes is also affected by the distribution of enrollees. Thus, if payment rates rise in those same counties, the projected spending will rise. As a result of the effect both on the budget and on projected spending, proposals that can be implemented in a budget-neutral manner under a static model may be unaffordable under a dynamic model, where the budget may shrink and projected spending may grow based on the redistribution of enrollees.

Even if a particular payment rate proposal is affordable (that is, can achieve budget neutrality) under both models, the resulting county-level payment rates will differ because the proposal will require smaller or larger adjustments to rates to achieve budget neutrality. The effect of the enrollment pattern on payment rate estimates differs across proposals, due primarily to differences in the degree of enrollment shifts and the amount of money that is reallocated from the baseline budget. For example, as floors increase, they generate a stronger enrollment response which in

[4] The simulation model only requires assumptions about how enrollees are distributed across counties, not about how national enrollment grows. Total enrollment levels do not affect the calculation of payment rates, although they of course affect total payments. As a result, assumptions are stated in terms of the direction of change, not the magnitude of change. Thus the definition of parameters such as "moderately high enrollment" cannot be stated as precise numbers in the absence of an assumed national average enrollment growth.

[5] Just as numerical enrollment levels cannot be specified, this parameter is stated as "up to a 1 percent increase." The exact relationship depends on national average enrollment growth.

turn leads to dynamic county estimates that diverge more from static estimates. Since the enrollment changes are due in part to payment policy changes, the redistribution of enrollees differs across proposals.

Comparing Estimates from Dynamic and Static Models

As noted above, use of the dynamic enrollment-growth assumptions tends to reduce both the national average payment and many individual county payments. By 2003, the average national payment (weighted by the number of beneficiaries per county) would be $596 under the dynamic model instead of $611 under the static model (see Figure II-1-6). This amounts to about a 2.5 percent reduction. At the county level, the changes are bimodal since some counties (for example, those already at the floor) are constrained from being reduced.

Comparing Simulated Rates to Actual Rates

The simulated 1998 rates provided to the Congress during its deliberations in 1997 did not precisely match the actual county rates published by HCFA. PPRC simulations during the congressional deliberations predicted that about one-half of all counties would receive blended rates in 1998. Because budget neutrality could not be achieved, there were no blended-rate counties in the final rates. Nevertheless, the difference at the individual county level is much smaller than this result might imply. Most blended rates were only a small amount above either a floor or minimum-increase level. On average, the actual 1998 monthly per enrollee payment rate (weighted by beneficiaries) was about $2 below PPRC's simulated rate. Among those counties for which actual rates were lower than simulated rates, the average monthly difference was about $5. Differences exceeded $10 in only 3 percent of all counties and exceeded $20 only in four Alaska counties (where no plans are offered).

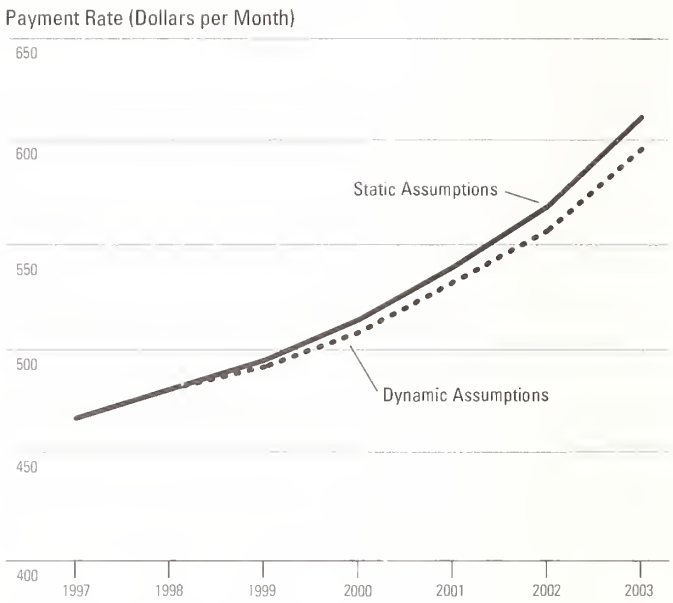
There are several reasons for differences between the results of the simulation and the actual rates. Some reasons are unique to decisions made for these simulations. Others may apply to any projected rates.

Estimates of the National Growth Percentage

HCFA's estimate of the national growth percentage (incorporating the statutory reduction of 0.8 percentage points for 1998) was 2.6 percent, substantially below the 3.4 forecast by CBO and used in simulations prepared for the Congress. This difference both lowered rates overall and, together with the effects of excluding GME payments and raising counties to the $367 floor, prevented budget neutrality from being achieved.

Figure II-1-6

Changes in Average Payment Rates, Using Both Static and Dynamic Enrollment-Growth Assumptions, 1997-2003



SOURCE: Medicare Payment Advisory Commission simulations of payment rates under the Balanced Budget Act of 1997

NOTE: Analysis based on actual rates for 1998 and simulated rates for 1999 through 2003.

Calculations Based on Total Medicare Versus Parts A and B Separately

At the request of congressional committee staff, the CRS and PPRC models were designed to replicate HCFA's original simulation of the President's budget proposal. This replication did not, however, match the details in the final legislative language. For example, the exclusion of GME payments in the simulations was based on county-level proportions of Part A spending only, and separate annual national growth rates were applied to Part A and Part B spending. The legislative language called instead for combined Part A/Part B numbers (that is, GME as a percentage of all spending and one national growth rate percentage for Medicare as a whole). This technical difference matters for two reasons. First, there are large differences in the separate national growth percentages for 1998 (–8.7 percent for Part A and +26.0 percent for Part B, before the reduction provided in the BBA), in part due to the transfer of home health services to Part B. Second, the division of Medicare spending between Parts A and B varies fairly widely by county.

New Data

For calculating 1998 rates, HCFA used newly updated numbers for fee-for-service and health plan enrollment, shares of spending attributed to GME, demographic characteristics, wage indexes, and geographic adjustment factors. Although these substitutions did not have a large effect on the results on average, they shifted results for some counties.

Conclusions

Several conclusions can be drawn about the differences between simulation results and actual published rates. First, the differences are quite small, only 1 percent for those counties where there were differences and less than half that for all counties. Second, small differences can matter considerably from the perspective of achieving budget neutrality in a system where the minimum increase is nearly as large as the average increase.

Third and perhaps most important, the actual rates for any year are calculated from the most recent projections of spending and enrollment growth. PPRC developed its dynamic enrollment-growth model to incorporate its best estimates of the distribution of enrollment growth. But, as PPRC and CBS regularly emphasized in reporting their projections, the accuracy of projected rates for future years depends on early estimates of those factors. Over time, revisions are made to these projections in order to reflect more recent information.

Reference

Physician Payment Review Commission, *Annual Report to Congress 1997* (Washington, DC: 1997).

Chapter 2

Risk Adjustment

Chapter 2

Risk Adjustment

The Balanced Budget Act of 1997 (BBA) requires risk-adjusted payments to Medicare+Choice plans starting in the year 2000. This chapter looks at two major decisions the Health Care Financing Administration (HCFA) must make for the design of the risk-adjustment system.

Volume I, Chapter 3 gives much of the background for the analysis presented here. The BBA requires plans to begin reporting encounter data in 1998. These data provide information on each beneficiary's use of care and diagnoses. HCFA will use these diagnosis data for risk adjustment, paying more for beneficiaries with costly conditions and less for others. HCFA must propose a method for risk adjustment in March 1999, with risk-adjusted payment to begin the following year. Collection of hospital inpatient encounter data already has begun.

Numerous practical decisions must be made to implement risk-adjusted rates. HCFA must choose a source of data (inpatient or all sites of care) and corresponding risk-adjustment model. HCFA must compute the payment weights for each diagnosis and then integrate these with all the other determinants of plans' payments. HCFA and plans must establish the flow of encounter data from plans to HCFA and the risk-adjusted payment in return.

This chapter looks at two major issues for the design of Medicare risk adjustment. The first is whether to use inpatient data or data from all sites of care. Inpatient data are more reliable and easier for plans to report, but result in increased capitation rates only for hospitalized beneficiaries. The second major issue involves the timing of the risk-adjustment process. Payment amounts could reflect high acute-care costs incurred at time of diagnosis, or lower costs incurred in the subsequent year. A separate set of payment timing questions—when does a diagnosis count for payment, and when is payment made—have significant implications for plan operations and for the administrative complexity of the risk-adjustment system.

The final section of the chapter addresses the phase-in of payment rates. Risk adjustment involves significant uncertainty and major realignment of payments. Phase-in rules allow HCFA to moderate the financial incentives and payment changes that risk adjustment will create. Ultimately, discussion should not focus on whether or not to risk-adjust payments, but on how rapidly and to what extent payment changes should be made.

Encounter Data: Inpatient Versus All Sites of Care

Medicare's risk-adjusted payment rates could be based on diagnoses from inpatient hospitalizations only or on diagnoses reported from all sites of care. This choice will fundamentally affect the payment system, from the process for reporting data to the rates paid. This section looks at five factors relevant to this choice: the feasibility of collecting data, the reliability of the diagnosis information, the persistence of reported diagnoses across years, the impact on incentives to hospitalize a beneficiary, and the effect on the structure of payments. The section concludes with a brief sketch of alternatives for reporting limited ambulatory care diagnosis data.

Feasibility

At least for the immediate future, it is far easier for all plans to report inpatient encounter data than to report both inpatient and ambulatory care data. First, a well-established standard for inpatient data (the 1992 uniform bill or UB92 standard) is already in use by nearly all hospitals. Standards for ambulatory care data are less well-accepted, and not all ambulatory care providers routinely generate such information. Second, there are relatively few inpatient forms to be submitted. In fee-for-service Medicare, for example, the average beneficiary generates roughly 0.4 hospital discharges per year, versus 23 bills from all ambulatory care sites. (Analysis by the Medicare Payment Advisory Commission [MedPAC] is not shown.) Finally, ambulatory care providers are far more numerous and diverse than hospitals, complicating plan efforts to specify reporting standards by contract.

Historically, HCFA has had little success collecting data for Medicare managed-care enrollees directly from hospitals. Existing regulations require hospitals to submit bills (so-called no pay bills) for Medicare managed-care enrollees. No payment depends on these bills, and perhaps unsurprisingly, only a small portion of such bills are submitted (GAO 1989).

The BBA may change this somewhat. Teaching hospitals must begin to submit no-pay bills for Medicare managed-care enrollees to receive related graduate medical education payments. These hospitals, however, account for less than half of Medicare fee-for-service discharges in total (ProPAC 1997).

HCFA recently has developed the standards for submission of inpatient data. Plans (not hospitals) will submit this information directly to HCFA's fiscal intermediaries. Plans must obtain the data from hospitals, then forward the information to HCFA.

Some plans may need to modify contracts with hospitals to ensure availability of these data. Plans that capitate hospitals or physician-hospital organizations may not receive inpatient information now. These plans will need to develop the contractual arrangements and systems to manage the flow of such data. In the longer term, these plans may want to pass through some of HCFA's risk-adjustment incentives to their capitated providers. Such an alignment of incentives would encourage hospitals and other providers to report the desired data in full.

Reliability

Hospital inpatient diagnoses appear much more reliable and more consistently reported than diagnoses in ambulatory care settings. Numerous studies since the inception of Medicare's hospital prospective payment system have found that coding of principal diagnosis is quite good, while coding of comorbid conditions is less so.

Diagnosis data from ambulatory care settings is generally less reliable. There is often significant lack of overlap between diagnosis profiles based on review of medical records, claims, and interviews with beneficiaries. There is very high variation in private-sector reporting of ambulatory care diagnosis data (Dunn et al. 1995).

The lower reliability of ambulatory care data might be due either to financial incentives or to structural problems. Few private-sector providers have requirements or incentives to report ambulatory care diagnosis data. Coding might improve once it begins to affect payment. Alternatively, there may be more structural problems—lack of systems software, inability to develop standards for a diffuse and heterogeneous provider population, or other factors—that may not be amenable to rapid change. Over time, as medical records become more computerized, these structural issues should play a smaller role.

Persistence

A third distinction between inpatient data and data from all sites of care is the persistence of reporting over time. If a diagnosis is reported for a beneficiary in one year, how likely is it that the diagnosis will be reported again in the subsequent year? A lack of persistence means that risk-adjusted payment for an individual may fluctuate widely from year to year.

It is unsurprising that hospital inpatient diagnoses show little persistence. Hospitalization tends to be sporadic, with few beneficiaries hospitalized in successive years. Of Medicare beneficiaries hospitalized in 1994 and surviving into 1995, for example, only about one-third were hospitalized again in 1995 (MedPAC analysis not shown).

Table II-2-1

Lack of Persistence of Diagnosis Coding in Fee-for-Service Medicare

Diagnosis Category	Beneficiaries in Category in 1994	Of Those Identified in 1994, Percent in This Category in 1995
Hypertension	58,000	59%
Coronary artery disease	37,000	53
Chronic obstructive pulmonary disease	36,000	62
Congestive heart failure	28,000	61
Stroke	25,000	51
Dementia	11,000	59
Rheumatoid arthritis	8,000	55
High cost diabetes	6,000	58
Renal failure	5,000	56
Quadriplegia/paraplegia	600	52
Dialysis	500	59

SOURCE: Medicare Payment Advisory Commission analysis of 1994 and 1995 Medicare 5 percent Standard Analytic File (SAF) data.

NOTE: Diagnosis categories were taken from the hierarchical coexisting conditions model (Ellis et al. 1996). Analysis uses diagnoses from all sites of care.

A more surprising finding is that diagnoses often do not persist even when tracked across all sites of care. Even for serious and permanent medical conditions, the persistence of diagnosis coding in Medicare fee-for-service data is low (see Table II-2-1). Typically, beneficiaries with conditions coded in one year have a slightly greater than 50/50 chance of having those conditions recorded in the subsequent year.

Neither approach (inpatient or all-sites data) will likely result in stable payment rates for individual beneficiaries. For inpatient data, lack of stability reflects the sporadic nature of hospitalization episodes. For ambulatory care data, it reflects coding practices. If plans' data reporting practices match those in Medicare fee-for-service claims, diagnoses will not be reported persistently.[1]

The lack of persistence of diagnoses and the resulting instability of payment may affect plans' operations. Annual revenues for small groups of beneficiaries are likely to fluctuate. That may create problems for new plans and small plans. If plans pass payments through to capitated providers, it may affect smaller providers as well. Finally, it may discourage the development of innovative programs for subsets of the chronically ill population, because the revenues to support such programs may vary significantly from year to year.

A further implication of the lack of persistence is that payments from risk adjustment do not match the underlying medical model of disease. Most conditions triggering increased payment are permanent, while the increased payment itself is transitory. Hospitalization for stroke, for example, might be a marker for a lifetime of elevated health care costs, but payments might increase for just one year.

A final implication is that the prevalence of disease is significantly underreported in a single year of Medicare fee-for-service data. Many beneficiaries with serious conditions reported in the prior year do not have those conditions reported in the subsequent year.

This underreporting significantly complicates the use of ambulatory diagnosis data for payment. Payments will reflect plans' reported prevalence of disease. More complete reporting will raise plans' payments. The finding of significant underreporting in existing data suggests that the potential increases in payment are large. HCFA may need to adjust for plans' data reporting practices.[3]

[1] The lack of persistence could not be attributed to factors other than reporting of diagnoses. For example, beneficiaries dying prior to 1995 (and thus having no 1995 claims) were excluded from the analysis. Repeating the comparison with the (presumed) more accurate inpatient-only diagnosis data for 1994 did not materially change results. In addition, the lack of persistence was relatively uniform across geographic areas (MedPAC analysis not shown).

[2] Diagnosis reporting from plans may improve once payment depends on diagnosis. For the fee-for-service baseline, by contrast, there is no strong financial incentive and HCFA can only instruct providers to code diagnoses more fully.

[3] A data reporting adjustment was done for the implementation of risk-adjusted rates for Colorado Medicaid (Tollen and Rothman 1998).

HCFA must also weigh the potential for increases in Medicare payments before using ambulatory care diagnoses for payment. The BBA applies risk adjustments after plans' guaranteed annual update in county rates, so risk adjustment may affect plans' payments in aggregate. Total payments to plans will depend on whether the average Medicare+Choice enrollee has costlier diagnoses than the average Medicare fee-for-service enrollee. Severe underreporting of diagnoses in the baseline raises the potential for total payments to increase if plans report diagnoses more completely.

Incentive to Hospitalize

Using inpatient diagnoses for risk adjustment means that plans receive higher rates only for hospitalized beneficiaries and lower rates for all others. This clearly alters plans' financial incentives, because hospitalization would result in higher revenues but other modes of treatment would not.

First, this creates an incentive to shift the mix of services provided. Use of inpatient diagnosis data creates a disincentive to treat diseases in ambulatory rather than inpatient settings. It creates a financial bias against plans that have effectively substituted ambulatory care for hospitalizations. It may discourage plans from using such methods of treatment in the future, and may stifle development of innovative methods to manage chronic diseases on an ambulatory care basis.

Second, it alters the incentives for the overall rate of hospitalization. Currently, plans must weigh the cost of hospitalization against its medical benefits. With inpatient-only risk adjustment, the cost of hospitalization would be weighed against the resulting increased payment and medical benefits.

Some shift in the financial incentives for hospitalization might be considered desirable. Newhouse and others (1997), for example, argued strongly in favor of creating more nearly neutral financial incentives. They suggest using partial capitation, paying plans both a reduced capitation and reduced fee-for-service amounts.

Risk adjustment, however, is not designed to shift incentives for individual services. Risk-adjusted payment triggered by a hospitalization episode reflects average annual costs for such individuals, not the cost of the hospitalization. Where partial capitation results in payment in proportion to use of care costs, risk adjustment using inpatient diagnoses results in payments that may bear no particular relation to the typical cost of the relevant hospitalization episodes. Inpatient-only risk adjustment shifts incentives for hospitalization as a side effect of the process for obtaining data.

One possible outcome is that plans might hospitalize beneficiaries at lower levels of severity of illness. This might be addressed, for example, by screening out some hospitalizations or excluding very short hospital stays (Ellis and Ash 1995). Alternatively, HCFA could review hospitalizations for medical necessity, excluding hospitalizations that did not meet standard screens of medical necessity.[4]

Finally, the presence of these incentives does not guarantee that plans will in fact alter hospitalization practices. Hospitalization involves many factors, and hospitalized beneficiaries tend to be quite ill. Financial issues may play a minor role relative to medical concerns.

Choice of Model and Structure of Payments

HCFA has funded the development of risk-adjustment models using either inpatient or all-sites diagnosis data. Two models now appear to be primary candidates for risk adjustment. Diagnostic cost groups (DCGs) use inpatient diagnosis data, and assign each beneficiary to at most one diagnosis category. Hierarchical coexisting conditions (HCCs), by contrast, use all diagnosis data, both inpatient and ambulatory care.[5] HCCs allow beneficiaries to trigger multiple diagnosis categories simultaneously (Ellis et al. 1996).[6]

These two models result in a different structure of payments. Risk adjustment using inpatient data (DCGs) results in high payment for a small fraction of the population. Based on Medicare fee-for-service data, higher payment would be made on behalf of the 20 percent of beneficiaries hospitalized during the year (see Table II-2-2).[7] Diagnosis data from all sites, by contrast, would result in payments being spread more broadly, with perhaps 60 percent of beneficiaries triggering some higher payment (see Table II-2-2).

[4] For Medicare+Choice fee-for-service plans, however, HCFA is barred from reviewing medical necessity of services.

[5] In theory, either model could be run on any source of diagnosis data. In practice, the models were developed and fine-tuned for their respective data sources (Ellis et al. 1996).

[6] In practice, only 15 percent of beneficiaries have three or more categories assigned simultaneously (MedPAC analysis not shown).

[7] Early versions of DCGs excluded a significant number of hospitalizations based on physicians' presumed discretion regarding hospitalization (Ellis and Ash 1995). That would have resulted in a further narrowing of the population receiving high payment. The more recent version of DCGs used here, by contrast, does not screen out those hospitalizations (Ellis et al. 1996).

Table II-2-2

Source of Diagnosis Data and the Structure of Payment

Data Source	Category	Annual Payment	Proportion of Population in Category
Inpatient only	No diagnosis	$3,700	80%
	Some diagnosis	10,800	20
All sites of care	No diagnosis	2,100	40
	Some diagnosis	7,200	60

SOURCE: Medicare Payment Advisory Commission analysis of Medicare 1994 and 1995 5 percent Standard Analytic File (SAF) data.

NOTE: For inpatient-only data, categories reflect the DCG model. For all-sites data categories reflect the HCC model. Payments match average fee-for-service Medicare costs in the year following diagnosis. Dollar figures are based on an average of $5,000 per beneficiary

Alternatives to Full Ambulatory Care Encounter Data

Given the costs and uncertainties for the collection and use of ambulatory care data, HCFA might consider alternatives. These are methods that would collect some ambulatory diagnosis information without requiring full ambulatory encounter data.

Sampling followed by review of medical records has been proposed as one alternative. Under this approach, the plan would review medical records for a random sample of beneficiaries. Plan staff or contractors would abstract diagnoses from these medical records and report this information to HCFA.

This approach would be useful to plans that do not now collect claims or encounter data from ambulatory care providers. Relatively modest sample sizes (a few thousand beneficiaries) would probably be sufficient to generate a reasonably stable overall payment rate for the plan.[8] Moreover, data produced by medical records abstracting personnel are likely to be more uniform and reliable than data reported by a wide variety of medical and billing staff.

A strategy of sampling medical records would raise three problems for HCFA. First, the method would not match the method HCFA would use to set payment amounts. For example, while payment amounts would be based on diagnoses reported during a year, this method would report all diagnoses in the medical record. At the minimum, HCFA would have to apply the medical records approach to a large sample of fee-for-service beneficiaries in order to calculate payment amounts.

A second issue relates purely to the use of a sample, not the method used to generate the diagnoses. Plans adopting a sampling approach would generate no diagnosis information for those not sampled. If those beneficiaries switched to a plan not using the sampling approach, HCFA would have to determine some default payment value for them.[9]

The final issue relates to the eventual recalibration of Medicare's payment amounts. At some point, HCFA may want to recalculate payment weights that reflect managed-care practices rather than the Medicare fee-for-service baseline. This requires detailed information on use of services—information that would not be present in diagnoses summarized from medical records. If most plans adopted this strategy, HCFA would not have adequate information for recalibration of weights.

An alternative approach would allow plans to report diagnoses for a specified subset of beneficiaries. For example, plans could report all beneficiaries with a diagnosis of cancer, whether hospitalized or not.

[8] A sample of this size would not allow the prevalence of any single disease to be estimated with great accuracy, but would be adequate for overall averages.

[9] If payments are based on prior-year diagnoses, HCFA must set such a default for beneficiaries just turning 65 with no Medicare diagnosis history. Use of sampling would mean that the default rate would apply to more beneficiaries.

The subset approach would raise many of the same issues as sampling. Setting appropriate payment would require applying the subset method to the Medicare fee-for-service data. This probably requires that reporting be linked to a specific major service, for example, that plans report cancer patients receiving chemotherapy, surgery, palliative care, or hospice rather than all cancer patients. Linking reporting to specific high-cost services would also enhance HCFA's ability to audit the diagnosis data. Finally, like the sampling approach, identifying subsets would not provide detailed utilization data needed for any eventual recalibration of payment weights.

Despite these difficulties, these approaches deserve some attention. Complete ambulatory encounter data will be expensive for plans to produce and difficult for HCFA to use as well. The benefits and drawbacks of all options should be considered, including full encounter data, sampling for review of medical records, and reporting of diagnoses for selected subsets of beneficiaries.

Timing and Risk Adjustment: Prospective Versus Concurrent Models

A second major element for the design of Medicare's risk adjustment is timing between diagnosis, costs, and payments. HCFA's choices in this area will affect not only the flow of payments, but the payment weights (amounts) for different diagnoses as well.

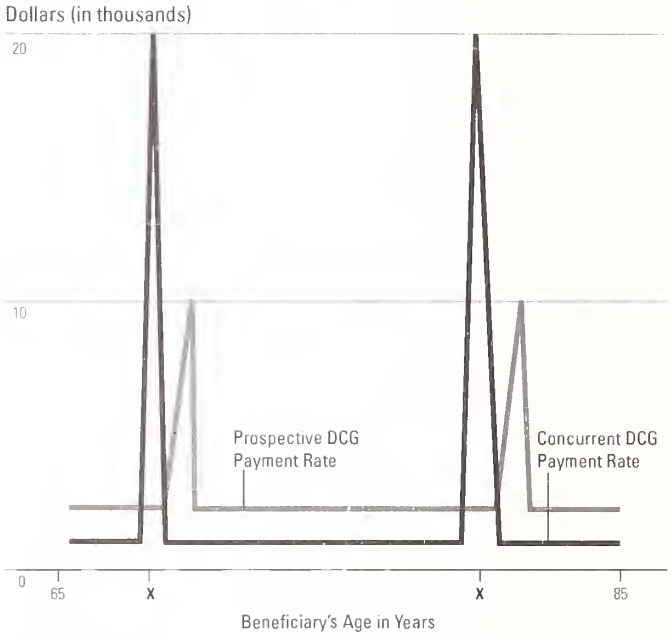
First, HCFA must determine when (what year) a diagnosis counts for payment and when payment is to be made. These choices affect the administrative complexity of risk adjustment, because beneficiaries and dollars must be tracked between the time of diagnosis and the time of payment.

Second, HCFA must determine what costs in the Medicare fee-for-service baseline will be used to determine the weight (payment) for each diagnosis. Payment could match typical costs in the year of diagnosis or those in the subsequent year. For the DCG model, for example, this would mean basing payment on the high acute-care costs in the year of hospitalization, or the lower costs of chronic and acute care the following year.

Throughout this section, the terms *concurrent* and *prospective* will be used to describe different approaches to timing. A concurrent method is one where there is no time lag between diagnoses and dollars. Concurrent payment means that a plan's payment for a year reflects diagnoses recorded that year. Concurrent weights mean that the level of payment reflects the high acute care costs in the year of diagnosis. A prospective method, by contrast, is one where diagnoses precede dollars. Prospective payment means that a plan's rates are based on diagnoses reported in the prior year. Prospective weights mean that the level of payment reflects the lower chronic-care costs in the year after diagnosis.

Figure II-2-1

Illustrating Concurrent and Prospective Risk Adjustment Over a Beneficiary's Lifetime



X = DCG Hospitalization

SOURCE: Medicare Payment Advisory Commission.

Payments in the DCG model provide an easy way to illustrate the two concepts of payment timing and payment amount (see Figure II-2-1). Concurrent and prospective payment weights result in "spikes" of different heights in Figure II-2-2. Concurrent and prospective payment timing, by contrast, determines the location of the payment spike, placing it in the year of hospitalization or the subsequent year.

Choices for payment weights (amounts) and payment timing affect two different sets of plans. Payment weights may affect all plans. Changing from concurrent to prospective weights could result in a large one-time change in any plan's payment. Payment timing, by contrast, has little impact on a plan with a stable enrolled population. If the rate and mix of enrollees' diagnoses do not change much over time, the plan's payments will be similar from year to year.

The first part of this section looks at questions for the timing of payment. Who will track beneficiaries switching plans between diagnosis and payment? How must plans' accounting systems and reserves accommodate the timing of payments? Does payment require a retrospective (end-of-year) settlement, and does the BBA allow such?

The second part looks prospective and concurrent payment weights. The concurrent method results in much closer match between payments and costs, and much larger redistributions of payment. The causes and consequences of these large payment changes should be fully understood before judging which approach is superior.

Issues for the Timing of Payments

The choice between prospective and concurrent methods for setting plans' payments raises a significant number of practical issues for plans and for the Medicare program. These include the tracking of beneficiaries and payments over time, and the need for retrospective (end-of-year) settlement of payments.

Tracking Beneficiaries Over Time

One of the main practical advantages of concurrent payment is avoiding the need to track beneficiaries over time. With concurrent payment, the rates ultimately paid to a plan would reflect the plan's enrollees for the current year. There would be no need to maintain information on beneficiaries' diagnoses for the previous year.

Prospective payment timing, by contrast, requires that rates paid to the plan reflect diagnoses recorded for beneficiaries in the previous year. This would involve significantly more bookkeeping detail by HCFA to track diagnosis information for each beneficiary. In particular, HCFA would have to track beneficiaries who switched plans.[10] Truly new beneficiaries—those just turning 65—would have no such diagnosis history and would have to be paid for at some default rate.

Accounting and Reserves Issues

The two modes of payment timing have different implications for plans' administrative systems. Prospective payment timing would allow the plan to know its average Medicare payment per beneficiary at the start of the year. The plan would be at risk, however, for new enrollees and disenrollees. With concurrent payment timing, by contrast, the average payment per enrollee would not be known until all diagnoses for the year were reported. Final payment for the year would require a settlement after the end of the year. This has at least two impacts on plan operations. With concurrent payment, plans' accounting systems may need to accrue assets and liabilities against expected year-end settlements. Second and perhaps more substantively, plans may need to adjust their reserves or asset mix to account for the (potentially large) lump-sum adjustments that might be made at year-end with concurrent payment.[11]

Statutory Issues

Concurrent mode of payment requires that HCFA make some retrospective (after year-end) payments, because it takes some time to process the year's diagnosis information. That may or may not raise an issue relative to current law, depending on the intent and interpretation of the BBA. The BBA specifies that Medicare+Choice plans accept full financial risk on a prospective basis for all Medicare enrollees, with certain exceptions: outlier payments above a HCFA-determined threshold, reinsurance for emergency (and out-of-plan) care, reinsurance for aggregate losses in excess of 15 percent, and pass-through of risk to capitated providers. Concurrent payment—with the resulting retrospective adjustment of payments—may or may not require explicit legislative authority depending upon the legal interpretation of this language.

Prospective Versus Concurrent Payment Weights

This section begins with an empirical analysis of concurrent and prospective payment weights. Concurrent weights for diagnoses reflect typical Medicare fee-for-service costs in the year of diagnosis, while prospective weights reflect typical costs in the subsequent year. Concurrent weights result in greater redistributions of payment in three ways relevant to Medicare: across individuals, for new managed-care enrollees on average, and across geographic areas.

The second part explores why concurrent and prospective weights are so different, and what this may mean for risk adjustment. The concurrent approach provides a vastly closer match between payments and use of care. This leads to discussion of whether and to what extent risk adjustment should reflect use of care.

[10] This assumes that HCFA would use prior year diagnoses wherever those occurred. Payment for a plan's new enrollees, therefore, might be based on diagnoses recorded in Medicare fee-for-service or in another plan. If this is not the case, then a prospective approach would require that new enrollees in each plan be handled as special cases within the risk adjustment system.

[11] It is not immediately clear whether plans would want to increase reserves (due to uncertainty in HCFA's total payment) or reduce reserves (because HCFA's total payment would more nearly reflect variations in costs during the year).

Table II-2-3

Prospective and Concurrent Risk Adjustment

Model	R-squared	Category	Annual Payment	Proportion of Population in Category
Prospective				
PIP-DCG	6%	No DCG	$3,700	80%
		Some DCG	10,800	20
HCC	8	No HCC	2,100	40
		Some HCC	7,200	60
Concurrent				
PIP-DCG	43	No DCG	1,100	80
		Some DCG	21,700	20
HCC	42	No HCC	200	40
		Some HCC	10,000	60

SOURCE: Medicare Payment Advisory Commission analysis of Medicare 1994 and 1995 5 percent Standard Analytic File (SAF) data. R-squared statistics taken from Ellis et al. (1996).

NOTE: PIP-DCG is the principal inpatient diagnostic cost group model. HCC is the hierarchical coexisting conditions model.

Three Empirical Analyses

The DCG and HCC risk-adjustment models (described above) were applied to Medicare fee-for-service claims in concurrent and prospective modes. For either approach, the concurrent method provides a much closer fit between payments and costs. These models capture over 40 percent of the variation in individuals' costs when applied concurrently, but only 6 percent to 8 percent in prospective mode (see Table II-2-3).[12]

The concurrent approach results in much higher payment weights for those with relevant diagnoses and correspondingly lower rates for others (see Table II-2-3). (For convenience, payment rates are expressed relative to a $5,000 per beneficiary per year average.) Concurrent DCGs using the principal inpatient diagnosis (PIP-DCGs), for example, would pay an average of almost $22,000 per year for hospitalized beneficiaries, but only $1,100 for the 80 percent of beneficiaries not hospitalized.[13] Similarly, concurrent HCCs would pay just $200 per beneficiary per year for 40 percent of the population without a payment-relevant diagnosis.[14]

The low costs of Medicare managed-care enrollees in the year prior to enrollment provide another relevant way to contrast prospective and concurrent models. This shows how the two approaches would affect payments for a group, in this case, beneficiaries who eventually joined managed-care plans. Because average health status of a large group changes slowly, this analysis of the preenrollment fee-for-service experience provides some gauge of the likely impact on rates paid for new enrollees.

Concurrent risk adjustment would almost fully account for the low average preenrollment costs of new managed-care enrollees (see Table II-2-4). This would result in risk-adjusted payments for this group that matched their low average Medicare fee-for-service costs. Prospective risk adjustment, by contrast, would not set payment quite so low for this cohort.

This analysis should be interpreted with caution. It demonstrates only relative (not absolute) performance of prospective and concurrent methods. The new enrollees studied are only a fraction of all managed-care enrollees, appear much healthier than average, and are likely to see health status changes over time. This analysis does not show what average risk-adjusted payments would be.

[12] This analysis uses Medicare fee-for-service claims from 1994 and 1995 as the source of the diagnosis and cost data.

[13] Both models set many different payment rates for diagnoses. Those rates were averaged together in this table to simplify presentation and discussion.

[14] The greater spread of the concurrent payment weights from highest-paid to lowest-paid categories has been noted in a variety of studies (Ellis et al. 1996; Dunn et al. 1995).

Table II-2-4

Examining Managed-Care Enrollees' Low Costs in the Year Prior to Enrollment

Measure of Cost or Payment	Ratio of New Enrollees to Medicare FFS Comparison Group
Actual costs	0.72
Risk-adjusted payment	
Prospective DCG	0.88
Prospective HCC	0.89
Concurrent DCG	0.77
Concurrent HCC	0.74

SOURCE: Medicare Payment Advisory Commission analysis of Medicare 5 percent Standard Analytic File (SAF) and Enrollee Data Base (EDB) files, 1994 -1996

NOTE: Sample consists of all Medicare beneficiaries with 24 months of Part A and Part B Medicare fee-for-service enrollment in 1994 through 1995. New HMO enrollees are those beneficiaries who subsequently enrolled in an HMO at any time in 1996. Analysis is based on costs and diagnoses reported in fee-for-service Medicare in the year prior to enrollment. PIP-DCG is the principal inpatient diagnostic cost group model. HCC is the hierarchical coexisting conditions model.

Figure II-2-2

Risk Adjustment Relative to the Medicare Fee-for-Service Baseline

$$\text{Payment} = \text{FFS Spending} * \frac{\text{HMO Risk}}{\text{FFS Risk}}$$

SOURCE: Medicare Payment Advisory Commission.

A third relevant test involves geographic variation in risk for the Medicare fee-for-service population. At first glance, it is not clear why risk variations across the fee-for-service population are relevant to managed-care payment. The connection is in the details of the actuarial calculation of rates. So long as payments are based on fee-for-service costs, each plan's rate will reflect its risk mix relative to the Medicare fee-for-service population (see Figure II-2-1).

Prior to the BBA, this connection was clear because all payments were based on local (county-level) fee-for-service costs. If a plan attracted the average beneficiary in its service area, it was to be paid a rate that matched local fee-for-service costs.[5] Omitting fee-for-service risk from the calculation would result in double-counting of risks because fee-for-service costs already reflect that risk. For example, if costs in a county are low because beneficiaries there are healthy, a plan that merely enrolled the average healthy beneficiary in that county would see payments fall if the baseline adjustment were not made.

The situation becomes more complex under the BBA payment formula, which involves a blend of local costs and national costs, with minimum (floor) rates. Risk adjustment relative to the fee-for-service baseline would apply to the portion of payment that remains based on local fee-for-service costs.[6]

Concurrent risk adjustment would result in larger adjustments to the 1997 Medicare fee-for-service county baseline (see Table II-2-5). In this table, the fee-for-service populations of Miami and Los Angeles both demonstrate high measured risk, while the Minneapolis–St. Paul fee-for-service population appears relatively healthy. Variation in measured risk is higher when models are run in concurrent mode.[7]

Risk adjustment need not result in geographic redistribution of payments. If managed-care enrollees in each area have the same average risk as their fee-for-service counterparts, the adjustment of the baseline merely keeps payment level. (In Figure II-2-2, the risk terms cancel.) The analysis suggests, however, that if geographic redistributions occur they will be larger under concurrent risk adjustment.

[5] In fact, plans were paid 95 percent of these costs, and the rate used was a projection of costs for the coming year.

[6] A complete treatment of this issue would separately specify what to do with these three components of the payment rates: national costs, local 1997 baseline costs, and payments in floor counties.

[7] Because this adjustment would apply only to part of plans' payments, the impact on total payment would be smaller than shown in Table II-2-5.

Table II-2-5

Examining Variations in Risk Across Geographic Areas

City	1997 Capitation Rate	Risk Index for Area (U.S. = 1.0)			
		PIP-DCG		HCC	
		Prospective	Concurrent	Prospective	Concurrent
Miami	$748	1.15	1.19	1.38	1.51
Los Angeles	622	1.08	1.08	1.15	1.25
Minneapolis-St. Paul	393	0.97	0.90	0.89	0.81

SOURCE: Medicare Payment Advisory Commission analysis of Medicare 5 percent Standard Analytic File (SAF) data and AAPCC files.

NOTE: Analysis excludes age-ins and deaths during the 1994-1995 period, and so should be taken merely as indicative of the magnitude of the payment changes that would occur. PIP-DCG is the principal inpatient diagnostic cost group model. HCC is the hierarchical coexisting conditions model.

In summary, the analyses of this section gave a consistent picture of concurrent and prospective risk adjustment. The concurrent approach results in larger changes in payment, in three relevant dimensions: among beneficiaries, on average for the new enrollee cohort, and across geographic areas.

Explaining the Difference Between Prospective and Concurrent Risk Adjustment

While the previous section established that prospective and concurrent models are quite different, this section explores why they are different. Concurrent models show much higher correlation between payments and costs than prospective models do. The first step in assessing the merits of these models is to ask what causes the high correlation.

A concrete way to understand concurrent and prospective weights is to trace hospital spending in the DCG model. This simplifies discussion, because payment weights almost entirely reflect how the models categorize hospitalized beneficiaries.[18]

For either prospective or concurrent weights, all beneficiaries (and all costs) are accounted for somewhere, either in a category defined by a diagnosis or in the default (no diagnosis) category. The approaches differ strongly, however, in allocating hospitalized beneficiaries to these two categories, diagnoses or default.

The concurrent DCG model puts all hospitalized beneficiaries into some diagnosis group. It assigns no hospitalized beneficiaries to the default (no diagnosis) group.[19] All hospital costs, therefore, are assigned to the weights for the diagnosis groups.[20]

No hospital costs are assigned to the weight for the default (no diagnosis) group.[21] This complete partition of hospital costs occurs because the diagnoses used for assignment to categories and the hospital costs come from the same year of claims data.

The prospective DCG model, by contrast, allocates only part of hospital costs to the DCG diagnosis categories. These are the costs of beneficiaries hospitalized both the prior year (determining the diagnosis) and the current year (incurring the cost). About one-third of beneficiaries have a hospitalization in each of two successive years. Very roughly speaking, prospective DCGs allocate one-third of hospital costs to a specific diagnosis, leaving the other two-thirds in the default (no diagnosis) category. This occurs because the diagnoses used for assignment to categories and the hospital costs come from different years of claims data.

[18] In practice, the weights will reflect all costs for these beneficiaries, not just their hospital costs.

[19] As noted above, the DCG version used for this analysis includes no screens on hospitalizations. Beneficiaries whose hospitalizations were excluded by such screens would fall into the default (no diagnosis) category.

[20] Hospital costs are used for purposes of discussion. The model actually allocates all costs of hospitalized beneficiaries to the diagnosis group, and none of the costs of hospitalized beneficiaries to the default (no diagnosis) group.

[21] This separation of hospitalized beneficiaries largely accounts for the high R-squared statistics of the concurrent DCG model. Merely separating the hospitalized beneficiaries (but ignoring diagnoses) produces an R-squared statistic of 0.35, versus the 0.43 of the concurrent DCG model (MedPAC analysis not shown).

This difference between prospective and concurrent payment weights can be described two ways. The literal description is that the prospective model divides hospital costs into "subsequent" hospitalizations and "others," where a subsequent hospitalization means a hospitalization following one in the previous year. The weight for a diagnosis only reflects the cost of subsequent hospitalizations, with the costs of all other hospitalizations averaged into the default (no diagnosis) category.[22]

A less literal but more useful description is that the payment weights of the concurrent model capture acute, unpredictable episodes of care (Dunn et al. 1995; Ellis et al. 1996). For the prospective model, by contrast, the cost of such episodes is averaged into the default (no diagnosis) category when calculating the payment weights.

Describing the difference in methods in terms of unpredictable acute care gives one way to characterize the choice of methods. Should payment rates reflect the costs of unpredictable acute episodes or not? Doing so results in a closer match of payments and costs, but allows a much greater share of payment to depend on services actually performed by the plan.

One view of this issue is that financing acute unpredictable episodes is the function of insurance. From this perspective, concurrent risk adjustment may begin to encroach on plans' traditional role as insurers because so much of payment will depend on the actual use of services during the year. In the concurrent DCG model, 78 percent of total payment is triggered by use of services (hospitalization).[23] In the prospective DCG model, by contrast, 26 percent of total payment is triggered by hospitalization.

An alternative view is that a high dependence of payment on service use may be a reflection of good performance of the risk adjuster. If variations in use of care are due mainly to variations in health status, then a high correlation of use and payment would be a desirable outcome of the risk-adjustment process. For individual beneficiaries, for example, those who are hospitalized tend to be in poorer health than those who are not. When viewed at the level of the plan, however, variations in hospitalization rates may reflect practice patterns, structure of benefits, or other significant factors in addition to health status.

Summary and Conclusion: The Importance of Phase–In

The potential for phasing-in the risk-adjusted rates offers a simple way to adjust the intensity of the incentives created by risk adjustment. With a phase-in clearly defined, any feasible model can be implemented to some degree, simply by averaging risk-adjusted payment with existing payment rates. A viable and easy phase-in mechanism changes the debate from whether or not to risk adjust to how much to risk adjust.

The simplest phase-in of rates would be to average the rates paid for each beneficiary under the old system with risk-adjusted rates. Payment could initially be based heavily on current rates but move later to a greater emphasis on the risk-adjusted rate.

An alternative approach would be to place an explicit limit on the amount by which risk adjustment can change any plans' rates in any one year. This would directly address plans' aversion to sharp swings in payment, and would also moderate any instability of payment for small or new plans.

Deciding the speed of the phase-in requires balancing the problems of the existing system against the flaws of any proposed risk- adjustment approach. A slow phase-in perpetuates all the problems of the existing payment method. Currently, Medicare makes no payment distinctions based on the health status of managed-care enrollees, causing many problems for the Medicare risk-contracting program (see Volume I, Chapter 2). With this as the baseline, a system that begins by making some modest adjustment based on hospitalized beneficiaries is apt to move payments in the right direction, because hospitalized beneficiaries are on average a very ill portion of the Medicare population.

In the longer run, Medicare will have more options for risk adjustment and more experience with the current system. The likely initial approach to risk adjustment, DCGs, will distort the incentive to hospitalize, but plans' practices may or may not respond to this incentive. Over the longer run, HCFA may have the option of moving to complete encounter data for risk adjustment as well as fine-tuning methods. The phase-in of rates allows HCFA to begin moving in this direction while the development of risk adjustment.

[22] Use of the term subsequent hospitalization does not imply any medical linkage between the two hospitalizations. Initial and subsequent hospitalizations may be medically unrelated, but just happened to occur in successive years.

[23] That is, a plan with no hospitalizations would be paid roughly 78 percent less than the $5,000 per beneficiary per year average in Table II-2-3.

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Chapter 3

The Balanced Budget Act of 1997: Its Effect on PPS Inpatient Margins

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The Balanced Budget Act of 1997 (BBA) reduced anticipated federal spending by $127 billion between 1998 and 2002. The Medicare program alone accounted for $112 billion in savings over this five-year period. These savings represent a 9.1 percent reduction in total program spending, and a decrease in the annual growth rate from 5.8 percent to 5.6 percent.

Before the enactment of the BBA, payments under Medicare's prospective payment system (PPS) for hospital inpatient services amounted to almost one-third of expected program spending. Reductions in PPS operating and capital payments constitute about the same proportion of estimated savings.

This chapter discusses some of the most important provisions in the BBA affecting PPS payments, and describes their potential effects on the relationship between payments and costs. This analysis is not intended to predict the financial performance of the industry in today's rapidly changing marketplace. Rather, it portrays the new PPS provisions in context, reflecting not just the magnitude of the savings but also the level to which payments would have grown in the absence of legislation. The implications of the lower rates of cost growth that hospitals have achieved in the past several years are also considered.

PPS Provisions of the BBA

The BBA provisions that affect PPS payments account for about $32 billion in savings over the five-year budget period (see Table II-3-1). Some of these provisions affect both the level of PPS payments and their distribution across hospitals, while others affect only one or the other.[1]

More than half of the BBA's impact on the level of PPS payments is attributable to changes in the update applied to PPS operating payments each year. The PPS update is the factor by which the basic payment rates are increased to reflect expected inflation in hospital input prices, as measured by the PPS hospital market basket index. From 1986 through 1996, the Congress set the PPS update at an average of 2.1 percentage points below the forecasted market basket increase in each year. In 1997, with no agreement on new legislation, the PPS update was set at 0.5 percentage points below the forecasted increase, as required by the law in place at the time. Had the BBA not been enacted, the PPS updates for 1998 through 2002 would have been set equal to the forecasted market basket increase. Instead, they were set at an average of 1.7 percentage points below market basket — comparable to the increases over the previous decade.[2]

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[1] Volume I, Chapter 5 contains a discussion of the hospital inpatient PPS and its components.

[2] This probably is the best indication of the extent to which the baseline provisions differ from previous experience. Congress historically has set provisions in law that it intends to revisit when new legislation is developed. The high PPS updates for 1997 and beyond were set in the Omnibus Budget Reconciliation Act of 1993, and the BBA similarly sets the PPS updates equal to the market basket increase for 2003 and beyond.

Table II-3-1

Estimated Savings from PPS Provisions in the Balanced Budget Act of 1997 (In Billions)

Provision	Estimated Savings
PPS operating update*	$17.1
PPS capital payments*	5.3
IME payments*	5.6
DSH payments*	0.6
Outlier payments*	2.2
Certain hospital discharges to post-acute care	1.3
Small rural Medicare-dependent hospitals	-0.2
Reclassification for DSH payments	0.0
Rural referral centers	0.0
Floor on area wage index	0.0
Base payment rate for Puerto Rico	0.0
Hemophilia pass-through	0.0
Special provisions for hospitals with certain characteristics	0.0
Total	31.9

SOURCE: Congressional Budget Office, August 1997

NOTE: Several other provisions that affect payments to PPS hospitals but are not reflected in the calculation of PPS inpatient margins are not included in this list. These include the reduction in Medicare payments for its beneficiaries' bad debts, which is not considered in the calculation of PPS margins, and graduate medical education payments for Medicare+Choice enrollees treated at PPS hospitals, which are not considered PPS payments.

* Reflected in simulation of payment policy effects.

In addition, the BBA reduced the PPS payment rate for inpatient capital costs. This change eliminates the large increase in capital payments that occurred in 1996, with the expiration of budget neutrality. This provision, in effect from 1992 through 1995, required that capital payment rates must be set in each year so that payments would equal 90 percent of aggregate anticipated capital costs. (See Volume I, Chapter 5 for more discussion of the PPS capital payment rates.)

The BBA also lowered the indirect medical education (IME) payments for teaching hospitals and the disproportionate share (DSH) payments for hospitals that treat a large share of indigent patients. Both IME and DSH payments are concentrated among a relatively small number of hospitals. The BBA gradually reduced the IME adjustment by 29 percent by 2001 and DSH payments by 5 percent by 2002.[3,4] In fact, many teaching hospitals also receive DSH payments, and many hospitals that qualify for DSH payments also have teaching programs. Consequently, the BBA provisions cutting both of these adjustments may hit these hospitals particularly hard.

Outlier payments are made under PPS for cases that are exceptionally expensive. The size of the additional payment is determined by comparing the estimated cost for the case with a threshold amount. Before the BBA, the cost was decreased to reflect the hospital's IME and DSH adjustments prior to performing this comparison. If this adjusted cost figure still exceeded the outlier threshold, the hospital received not only the corresponding outlier payment amount, but also additional IME and DSH payments. However, many very expensive cases at teaching and disproportionate share hospitals did not qualify for outlier payments as a result of this procedure. The BBA eliminated the extra IME and DSH payments for outlier cases, but the Health Care Financing Administration (HCFA) subsequently discontinued the cost adjustment and revised the outlier threshold. Consequently, the losses borne by teaching and disproportionate share hospitals before qualifying for outlier payment are comparable in dollar terms to those borne by other hospitals, and they will receive outlier payments for more of their cases. The net effect of these changes is to reduce PPS payments overall, but to increase payments to teaching and disproportionate share hospitals.[5]

Other provisions in the BBA may affect the level or distribution of payments, but they are not included in the analysis that follows. That is because their effects are not possible to determine accurately given the information available, or they are thought to be relatively small.

Background

The base year for the analysis of the potential impact of the BBA was 1995. This was the date of the latest available Medicare Cost Report files, which contain information on hospital costs and Medicare payments that hospitals submit annually to HCFA. In that year, the PPS inpatient margin (which is an indicator of PPS operating and capital payments relative to the corresponding costs) was 10.0 percent (see Figure II-3-1).[6] This was the highest PPS margin in a decade, representing a remarkable turnaround from –2.4 percent only four years earlier.

[3] The BBA also limited the number of residents that each hospital could count in determining its IME adjustment, and provided an incentive payment for hospitals that agree to reduce the number of residents they train. Neither of these provisions is reflected in the analysis described in this chapter.

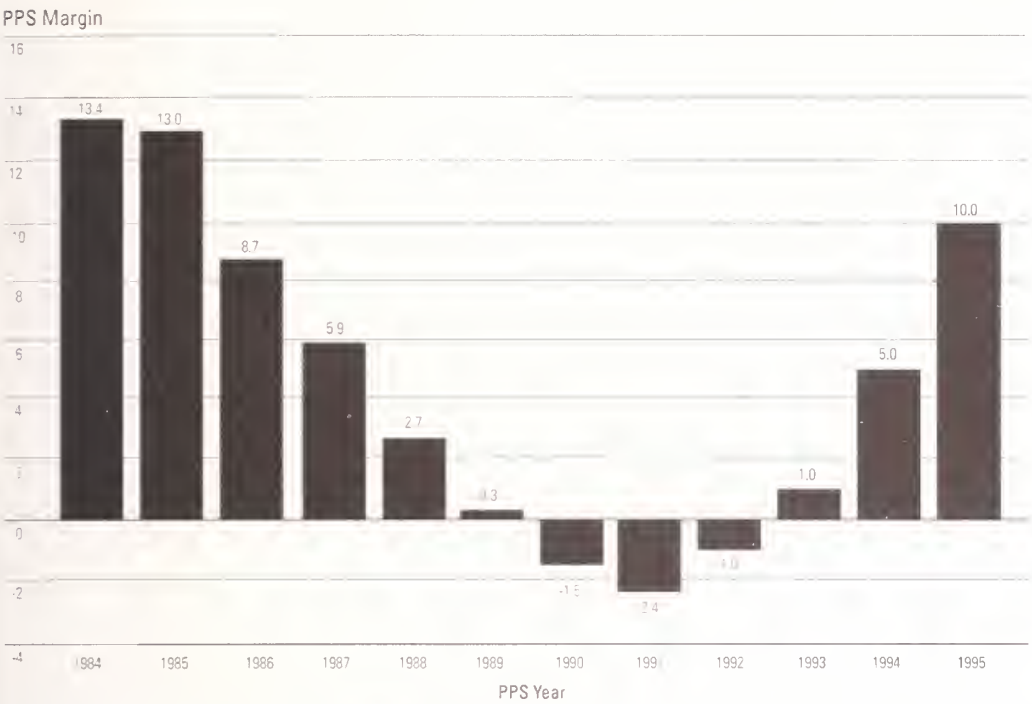
[4] The BBA also requires the Secretary of Health and Human Services to develop and report on a new DSH payment formula by August 1998. This might have substantial impact on the distribution of PPS payments, but since its form is not known, it is omitted from the analysis described below. See Volume I, Chapter 6 for additional analysis of DSH payment.

[5] Although HCFA's actions were not mandated by the BBA, they are directly related to the BBA provision and are reflected in this analysis.

[6] The PPS inpatient margin is the difference between PPS inpatient (operating plus capital) payments and costs, divided by PPS payments.

Figure II-3-1

PPS Inpatient Margin for All Hospitals, 1984-1995 (In Percent)



SOURCE: Medicare Payment Advisory Commission analysis of Medicare Cost Report data

Why this turnaround occurred is clear from looking at the trends in PPS payments and costs (see Figure II-3-2). The high PPS margins in the early years resulted from large increases in operating payments in the first two years of prospective payment (capital did not come under PPS until 1992) and considerably slower cost growth in the first year than in the succeeding years. Between 1984 and 1991, PPS payments per case rose at an annual rate of 6.4 percent, which was 2.5 percentage points faster than the cosumer price index (CPI), but PPS costs per case jumped by 9.1 percent per year. Between 1991 and 1995, growth in PPS payments per case had decelerated to 4.2 percent annually (1.3 percentage points faster than the CPI), but PPS costs per case were rising at only 1.0 percent (1.9 percentage points slower than the CPI). In fact, PPS costs per case actually fell in 1994 and again in 1995. Slower cost growth is a key factor in recent improvements in hospital financial performance and in modeling the effect of payment policy changes.

Hospitals were able to maintain their financial viability despite continued high cost growth—considerably above the increases in Medicare payments—throughout the 1980s and into the 1990s, because revenues were forthcoming from other sources. Between 1984 and 1992, hospitals' total revenues per adjusted admission rose at an annual rate of 9.1 percent— tracking cost growth remarkably closely (see Figure II-3-3).[7]

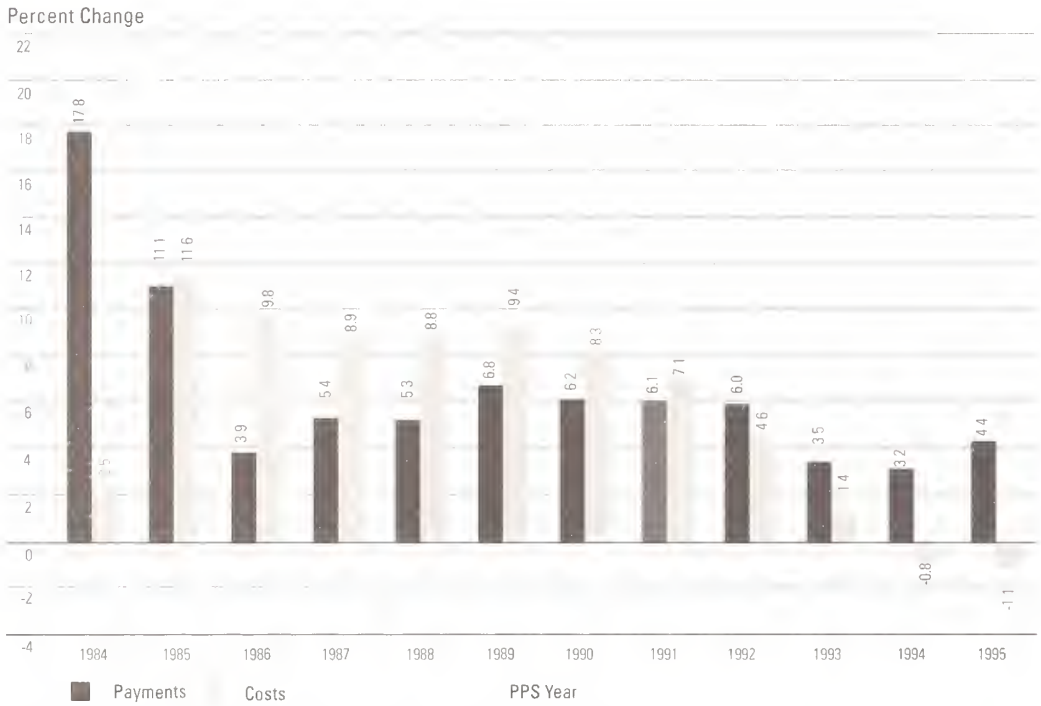
In 1993, revenues per adjusted admission grew by only 5.0 percent. By 1994, there was significant pressure on hospital revenues. For the next three years, revenues per adjusted admission rose only 1.8 percent annually—a full percentage point below the increase in the CPI. Nonetheless, hospitals were able to maintain their overall financial status, at least through 1995 (see Figure II-3-4).[8] The 5.8 percent total margin in that year was the highest in a decade, and, although total expenses exceeded revenues for 20 percent of all hospitals, this figure was the lowest since before PPS began in 1984.

[7] Total revenues include hospital payments from Medicare and other payers for inpatient and outpatient acute and post-acute services, as well as other sources of revenues. Adjusted admissions is a measure of hospitals' overall workload, representing a weighted average of inpatient and outpatient services.

[8] Data on total margins are available only through 1995 because they are obtained from the Medicare Cost Reports. The American Hospital Association's National Hospital Panel Survey is available on a more timely basis. While the Panel Survey is a relatively accurate indicator of changes in revenues and expenses, it is not a reliable source of information on the level of revenues, costs, or total margins.

Figure II-3-2

Annual Change in PPS Inpatient Payments and Costs Per Discharge, 1984-1995



SOURCE: Medicare Payment Advisory Commission analysis of Medicare Cost Report data

Data through July 1997 from the American Hospital Association's (AHA) National Hospital Panel Survey indicate that revenue pressure is, in fact, intensifying. At the same time, however, hospitals are continuing to respond by holding their cost growth to comparable rates.

Modeling the Potential Impact of the BBA

A fairly simple model of PPS payments and costs was used to simulate the potential effect of the provisions described above over the period covered by the BBA. The model had several key components. The first step was to extrapolate costs and payments from 1995, the base year, to 1997, the year before implementation of the Act. PPS inpatient costs per case were trended forward to 1997, at the relatively conservative rate of 2.0 percent per year. This was 1 percentage point below the increase in the market basket, or about 3 percentage points higher than the most recent documented trend in PPS costs per case, based on the most recent data on hospital cost growth.

Payments were based on the (known) PPS updates for 1996 and 1997, along with estimated changes in the Medicare case-mix index (CMI).[9] These rates were applied to 1995 costs and payments for each hospital.[10]

Payment growth under the previous legislation was then estimated, given the provisions that would have been in effect. These included: (1) PPS operating update equal to the market basket index, for which forecasts through the period of analysis were available; (2) a PPS capital update about 2.0 percentage points less than the operating update in each year, arbitrarily chosen to approximate the recent trend in PPS capital updates; and (3) no change in any other aspect of PPS payment.[11] These provisions

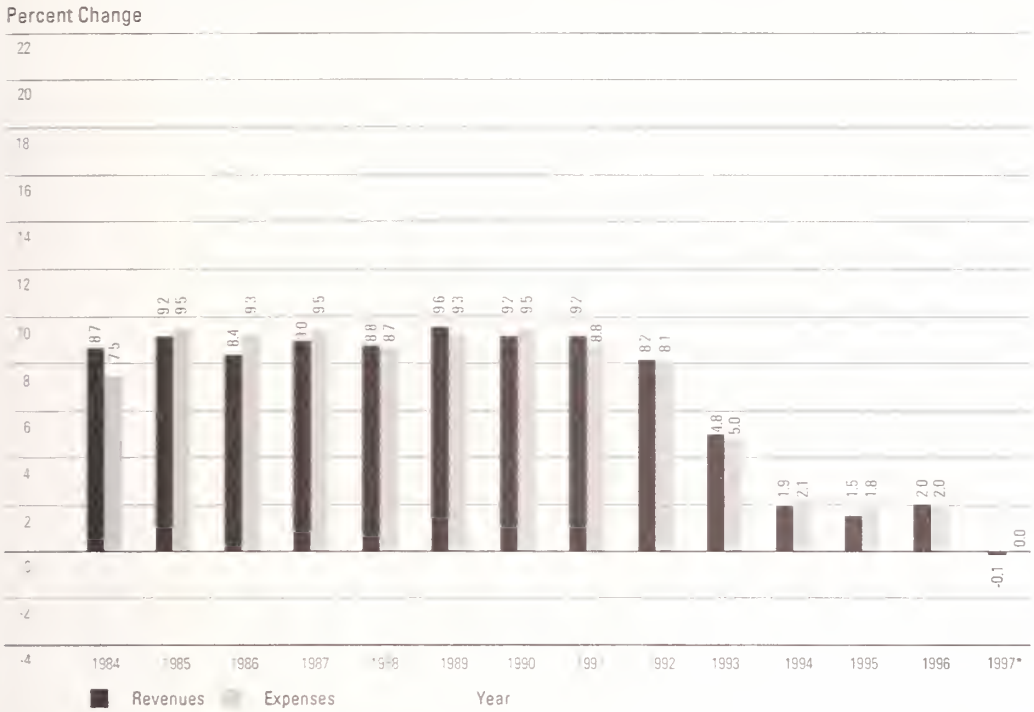
[9] PPS payment rises by 1 percent for every 1 percent increase in a hospital's CMI. Data on the increase in the CMI were not available for 1996 or 1997, when this analysis was done, but the Prospective Payment Assessment Commission developed an annual estimate of the increase in the CMI for use in its annual PPS update recommendations.

[10] Although the data clearly indicate that neither cost nor payment growth is uniform across hospitals or even groups of hospitals, the changing environment in which hospitals operate makes it impossible to project reliably their past cost history into the future on an individual basis. The recent trend toward slower cost growth, however, is remarkably widespread, so the results of this analysis probably present a reasonable picture of the impact of the payment changes in the BBA.

[11] Unlike the PPS operating update, the PPS capital update is not specified in law. Each year, the Secretary of Health and Human Services sets the capital update based on a determination of the appropriate increase in capital payment rates.

Figure II-3-3

Annual Change in Hospital Revenues and Expenses Per Adjusted Admission, 1984-1997



SOURCE: Medicare Payment Advisory Commission analysis of Medicare Cost Report data

* Estimated.

were applied separately to basic, outlier, IME, DSH, and capital payments in 1997. Each component of payments in 2002 was derived from extrapolating the estimates for 1997, as produced by Medicare Payment Advisory Commission's (MedPAC) PPS payment model. All assumptions were applied on a per case basis, to reflect the orientation of the payment system.

Finally, the effects of the BBA provisions were incorporated into the analysis. The PPS operating update was applied to operating payments in each year. The capital payment reduction and the reductions in the IME and DSH adjustments were applied as percentage changes from the previous baseline. Estimates of the impact of the outlier payment changes were based on the MedPAC PPS payment model. Both the baseline and BBA margins were calculated for each hospital group based on cost growth equal to the market basket increase in each year less 1 percentage point.[2]

Results

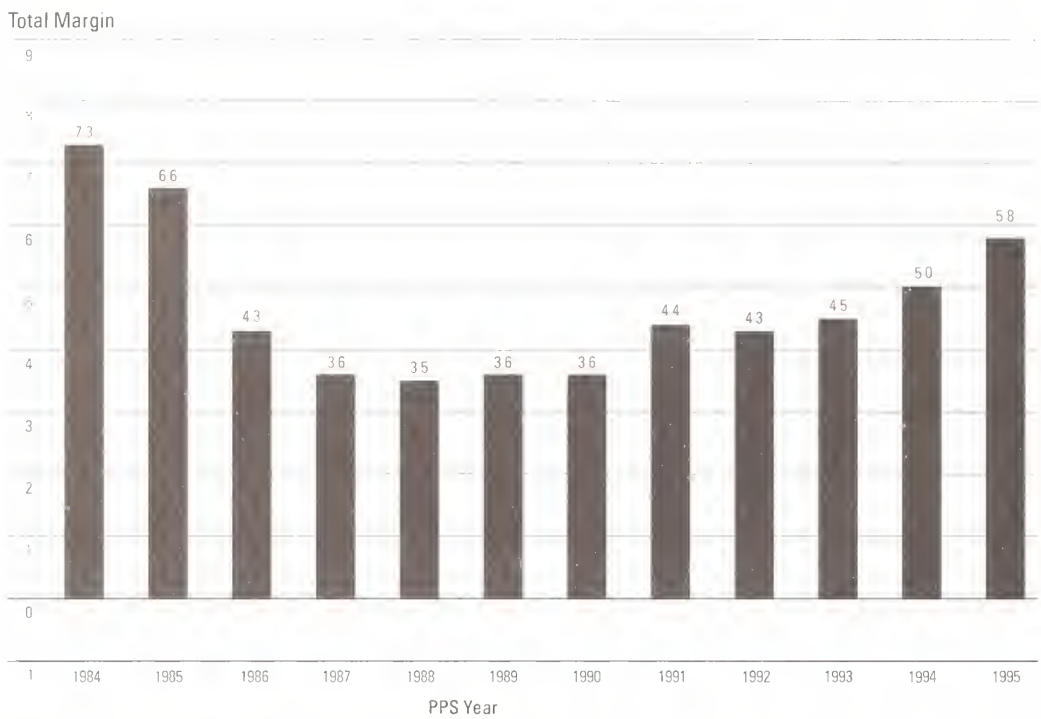
As might be expected, the BBA has a substantial effect on projected PPS margins (see Figure II-3-5). The aggregate PPS margin for all hospitals is 8.9 percentage points lower when the provisions of the BBA are incorporated into the analysis than under the baseline assumptions. The baseline PPS margin, however, is the result of provisions that differ substantially from the experience of the previous decade. Under these provisions, and assuming cost per case growth at market basket minus 1, the PPS margin would be 24.2 percent by 2002. The large decrease represented by the BBA, therefore, only reduces the projected PPS margin to 15.3 percent—which still would be the highest in history.

The distribution of the impact across hospital groups is swamped by the extremely high PPS margins across the board (see Figures II-3-6, II-3-7, and II-3-8). For example, major teaching hospitals (those with at least 25 residents per 100 beds) had the highest PPS margin of any group in 1995, 10.5 percentage points above the aggregate for all hospitals. This was 11.2 percentage points higher than the PPS margin for other teaching hospitals, and 14.5 percentage points more than for non-teaching hospitals. These distinctions would have become less meaningful by 2002 under

[2] The same analysis was done using a rate of cost growth equal to the forecasted increase in the market basket.

Figure II-3-4

Total Margin for All Hospitals, 1984-1995



SOURCE: Medicare Payment Advisory Commission analysis of Medicare Cost Report data

the baseline provisions, because the PPS margin for each of these groups was estimated to exceed 20 percent. With the reductions under the BBA, the PPS margin for major teaching hospitals still is estimated to be 12.2 percentage points above that for non-teaching hospitals, but all three teaching status groups would have double-digit PPS margins. The pattern is similar when hospitals are grouped by other characteristics.

PPS Payments and Total Revenues

Some context for these results is provided by examining their effect on hospitals' PPS payments and total revenues. As indicated throughout this chapter, some of the BBA's provisions will affect certain hospitals more than others. The PPS operating update and the capital payment reduction will affect all hospitals equally as a proportion of their PPS or capital payments, respectively, but different groups of hospitals have different relative shares of operating and capital payments.[11] The IME and DSH cuts affect hospitals that receive those payment adjustments, and the outlier payment changes also are distributed unevenly across hospitals.

The pattern of the combined effects of these provisions on PPS payments is not surprising (see Table II-3-2). They cut overall PPS payments by 10.6 percent below the baseline level. Except for the major teaching group, for which the impact is expected to be larger than average, and the rural and rural disproportionate share groups, which bear below-average burdens, all of the effects are within 0.5 percentage points.

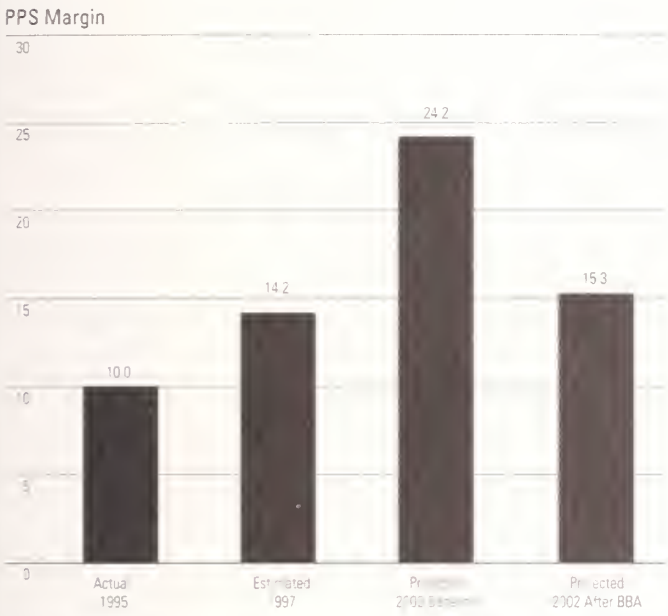
These reductions, however, are relative to the large increase in payments that would have occurred under the baseline policies. This increase, in fact, more than offsets the BBA reductions. As a result, almost every hospital group would have a more favorable PPS payment situation in 2002 than it had in 1997. The net effect on PPS payments relative to costs ranges from –0.1 percent for major teaching hospitals to 2.4 percent for rural hospitals.

The overall impact of the PPS changes by themselves, therefore, would not be unfavorable. For all hospitals, these changes account for a 0.3 percent increase in total revenues—the product of the 1.3 percent increase in PPS payments relative to costs and the

[11] Until 2001, the reduction in capital payments will affect individual hospitals only to the extent that their payments are based on the federal or hospital-specific PPS rates. Some hospitals, however, are paid partially on the basis of their "new capital" costs (that is, costs associated with capital projects that were being planned before or while the PPS for capital was implemented, but are not reflected in the hospital's base-year costs). Thus, they are less affected by the reduction. By 2002, capital payments for all hospitals will be based on the prospectively determined federal payment rate.

Figure II-3-5

Impact of the Balanced Budget Act of 1997 on PPS Margins in 2002, All Hospitals (Assuming Costs Increase at Market Basket-1)



SOURCE: Medicare Payment Advisory Commission analysis of Medicare Cost Report data

28.4 percent share of total revenues accounted for by PPS payments. The net effect on overall payments relative to costs by hospital group varies according to the impact of the PPS provisions and each group's PPS payments as a share of total revenues, and ranges from 0.0 percent for major teaching hospitals to 0.6 percent for rural hospitals.

Conclusions

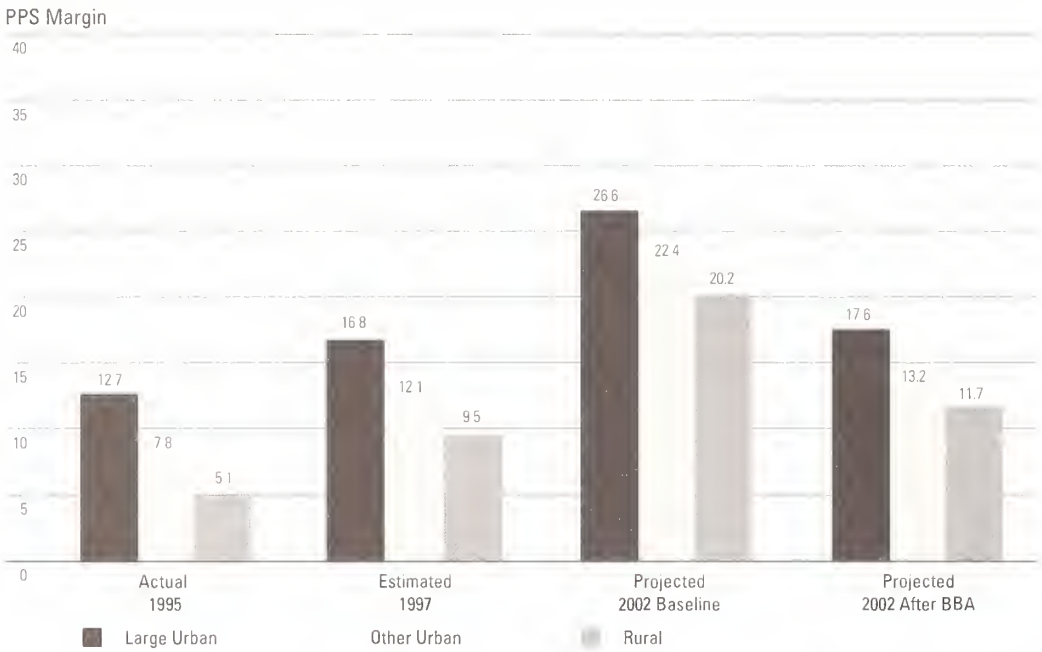
These simulations suggest how the PPS payment provisions of the BBA might affect PPS inpatient margins. Although the PPS margin does not measure the overall financial status of the hospital industry or of individual hospitals, it is the single best indicator of the adequacy of payments under PPS, because it provides a direct comparison of those payments and the costs to which they correspond. Moreover, because PPS replaced a cost-based reimbursement system, the PPS margin also represents the relationship between payments under the current system and what payments would have been under the original system.

The results discussed above are heavily dependent upon assumptions about hospital cost increases between 1995 and 2002. However, even if hospital inpatient costs per discharge grow at a rate equal to the PPS hospital market basket index—which is between 3.5 percent and 4.0 percent above that observed in the most recent two years for which data are available—the PPS margin in 2002 would be greater than 10 percent. It is clear that PPS payments would well exceed costs for the vast majority of hospitals.

Drawing conclusions about the BBA's impact on overall financial status is much more difficult, because it depends on a wider variety of factors. These include other Medicare payment policies, Medicaid payment changes, the growth of uncompensated care, and developments in private insurance—all of which are evolving rapidly and promise to continue doing so. Nonetheless, the most recent data indicate that, at least over the past several years, the industry has managed to improve the balance of revenues and expenses in the face of strong pressure from private payers. Although slightly more than 20 percent of all hospitals had negative total margins in 1995, this figure was lower than in any year since before PPS began in 1984. And, although other changes may exert increasing pressure on hospitals' continued viability, this analysis indicates that the PPS provisions in the BBA do not eliminate Medicare's ability to more than cover the costs of inpatient hospital services.

Figure II-3-6

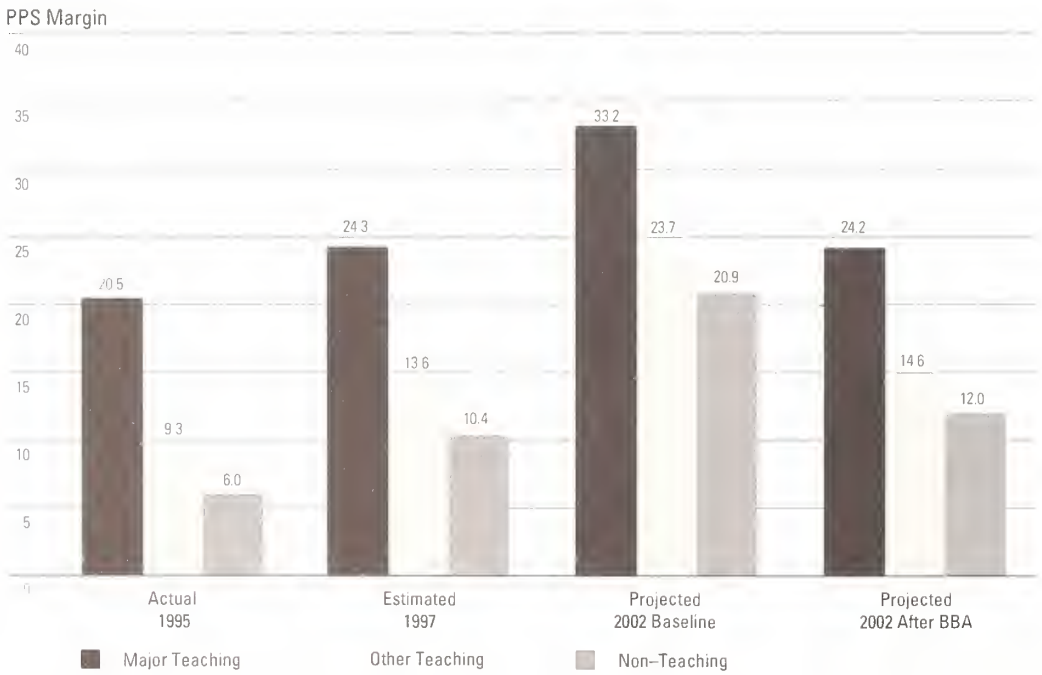
Impact of the Balanced Budget Act of 1997 on PPS Margins in 2002, by Location (Assuming Costs Increase at Market Basket-1)



SOURCE: Medicare Payment Advisory Commission analysis of Medicare Cost Report data

Figure II-3-7

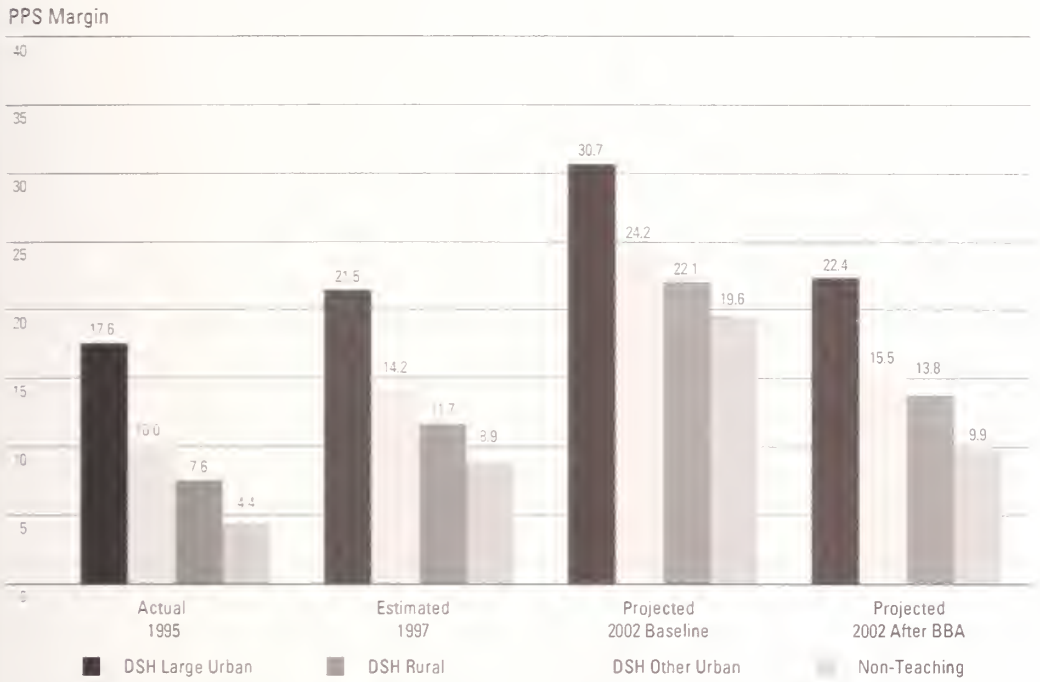
Impact of the Balanced Budget Act of 1997 on PPS Margins in 2002, by Teaching Status (Assuming Costs Increase at Market Basket-1)



SOURCE: Medicare Payment Advisory Commission analysis Medicare Cost Report data.

Figure II-3-8

Impact of the Balanced Budget Act of 1997 on PPS Margins in 2002, by Disproportionate Share Status (Assuming Costs Increase at Market Basket-1)



SOURCE: Medicare Payment Advisory Commission analysis of Medicare Cost Report data.

Table II-3-2

Impact of the Balanced Budget Act of 1997 on PPS Payments in 2002, by Hospital Group (In Percent)

Hospital Group	Baseline Change in PPS Payments Relative to Costs	BBA Impact on PPS Payments	Net Impact on PPS Payments	PPS Payments As Share of Total Revenues	Net Impact on Total Revenues
All hospitals	13.3%	-10.6%	1.3%	28.4%	0.3%
Large urban	13.3	-10.9	0.9	27.8	0.2
Other urban	13.3	-10.6	1.3	29.4	0.4
Rural	13.3	-9.6	2.4	28.5	0.6
Major teaching	13.3	-11.7	-0.1	24.1	-0.0
Other teaching	13.3	-10.7	1.2	29.9	0.3
Non-teaching	13.3	-10.1	1.9	29.6	0.5
DSH Large urban	13.3	10.7	1.1	26.5	0.3
DSH Other urban	13.3	-10.4	1.6	28.7	0.4
DSH Rural	13.3	-9.6	2.4	28.8	0.6
Non-DSH	13.3	-10.8	1.1	29.8	0.3

SOURCE: Medicare Payment Advisory Commission.

NOTE: Baseline change in PPS payments relative to costs is derived from the projected change in PPS payments under the provisions in law prior to the BBA relative to the projected cost increase under the assumptions used in the analysis. Several important changes that would affect PPS payments are not reflected above. These include revisions in the definition of transfer cases under PPS and the rules governing PPS capital exceptions payments, and special provisions for some rural hospitals and other hospitals in specific locations or circumstances. In addition, the effects of other changes that may affect Medicare payments to PPS hospitals are not estimated, such as revisions to payments for hospital outpatient services, direct graduate medical education costs, teaching hospitals that treat Medicare+Choice patients, and other providers that may be owned by hospitals and therefore affect their total margins.

Chapter 4

Hospital Payment Update Framework

Chapter 4

Hospital Payment Update Framework

The Medicare Payment Advisory Commission (MedPAC) develops recommendations for three different updates to hospital payment rates. The first two are the updates to operating and capital payment rates under Medicare's prospective payment system (PPS) for hospital inpatient services.[1] The third is the update to the target amounts for facilities excluded from PPS and paid under the rules set by the Tax Equity and Fiscal Responsibility Act of 1982 (TEFRA). (For more information on these facilities, see Volume II, Chapter 6.) The basic structure of all three updates is similar: Each features a forecast of input price inflation (a market basket) in the coming year and makes adjustments so that payments reflect changes in the resources hospitals use to provide care.

This chapter examines the individual components included in the update frameworks that were developed by the Prospective Payment Assessment Commission (ProPAC) and are now used by MedPAC. It starts by providing a summary of past and future updates enacted into law as well as a general overview of the Commission's operating update framework. Sections on each of the operating update framework's components, including the relevant data that helped the Commission develop its recommendations, follow. The chapter concludes by describing how and why the update frameworks for PPS hospital capital payments and for PPS-excluded facilities differ from the update framework for PPS hospital operating payments.

Updating PPS Operating Rates

The Balanced Budget Act of 1997 (BBA) set updates for PPS hospital operating payments that are below the forecasted increase in the PPS hospital market basket through fiscal year 2002 (see Table II-4-1). Although the updates are set in law, the Congress and others concerned with hospital payment policy will look to MedPAC for its judgment on the appropriateness of these updates given inflation, technological advances, expected productivity growth, and changes in how care is provided and the complexity of patients treated during an inpatient stay.

After the first two years of PPS, updates were on average 2.1 percentage points below the forecasted rise in the prices PPS hospitals faced between 1986 and 1996 (see Table II-4-2). The annual increase in per case payments, however, has always been higher than the update. This is because payments automatically rise under PPS as the Medicare case-mix index (CMI) goes up. (The CMI measures the anticipated resource requirements of Medicare patients.) Certain Medicare policy changes, such as modifications to disproportionate share payment rules, also have affected the growth in per case payments in some years.

[1] Operating payments are meant to cover the cost of labor, supplies, and services, while capital payments are for the purchase, installation, and financing costs of buildings and equipment.

MedPAC's update framework considers anticipated inflation in the prices of goods and services hospitals use to furnish inpatient care to Medicare beneficiaries, and adjusts this amount for expected changes in the resources used in an efficient facility and the types of patients treated. The framework uses objective data and the Commission's collective judgment about the appropriate effect of various factors on hospital operating costs in the coming year.

There are several components to the update framework. The PPS hospital market basket index measures inflation in the resources hospitals use to provide inpatient care. The market basket, however, does not reflect changes in how hospitals actually produce services or in the services they furnish. The scientific and technological advances (S&TA) adjustment reflects changes in the delivery of hospital services that enhance quality of care but raise costs. The productivity adjustment assumes that hospitals should produce services more efficiently and that the Medicare program should benefit from those productivity gains. An adjustment to account for changes in the hospital product helps ensure that payment rates are appropriate for the care currently provided in the inpatient setting. The case-mix adjustment is made to make sure that payments reflect real changes in the resource required to provide care to Medicare patients.

Table II-4-1

PPS Hospital Operating Updates (In Percent)

Fiscal Year	Update Amount
1998	0%
1999	MB - 1.9
2000	MB - 1.8
2001	MB - 1.1
2002	MB - 1.1
2003 and beyond	MB

SOURCE: Balanced Budget Act of 1997

NOTE: MB = Forecasted increase in the PPS hospital market basket index.

PPS Hospital Market Basket Index

The PPS hospital market basket consists of 22 components reflecting the range of goods and services that hospitals purchase (see Table II-4-3). Each component is weighted to reflect its share of total hospital operating expenses. Price changes in each component are measured using a variety of price indexes developed and maintained by the Bureau of Labor Statistics (BLS). The weights for each component are multiplied by the change in the corresponding price proxy and then summed to get the total market

Table II-4-2

Comparison of Increases in Hospital Market Basket, Average PPS Updates, and PPS Payments Per Case, Fiscal Years 1984-1998 (In Percent)

Fiscal Year	Forecasted Increase in PPS Market Basket[a]	Actual Increase in PPS Market Basket	PPS Update			Increase in PPS Payments Per Case[c]
			ProPAC Recommendation[b]	HCFA Recommendation	Actual Update	
1984	4.9%	4.9%	—	4.7%	4.7%	18.5%
1985	4.0	3.9	—	4.5	4.5	10.5
1986	4.3	3.9	1.5%	0.0	0.5	3.2
1987	3.7	3.5	1.7	0.5	1.2	5.4
1988	4.7	4.7	2.3	0.8	1.5	6.0
1989	5.4	5.5	4.2	2.7	3.3	6.6
1990	5.5	4.6	4.1	4.0	4.7[d]	6.5
1991	5.2	4.3	4.7	3.7	3.4	5.9
1992	4.4	3.1	3.0	3.0	3.0	5.2
1993	4.1	3.0	2.8	2.7	2.7	3.8
1994	4.3	2.5	3.6	2.6[e]	2.0	3.6
1995	3.6	3.0	2.6	2.0	2.0	4.0
1996	3.5	2.7	1.7	1.5	1.5	3.1
1997	2.5	2.1	1.0	1.0	2.0	3.8
1998	2.9	—	0.0	0.0	0.0	1.7

SOURCE: Medicare Payment Advisory Commission.

[a] Based on data available when final PPS rule was issued.
[b] Based on ProPAC's annual *Report and Recommendations to the Congress* and market basket forecast when final PPS rule was issued.
[c] Increases for 1984 through 1995 based on data from Medicare Cost Reports, which correspond to hospital cost reporting periods, rather than Federal fiscal years. Increases for 1996 through 1998 based on PPS update and estimated case-mix index increase.
[d] Actual updates for fiscal year 1990 adjusted to reflect 1.22 percent across-the-board reduction in DRG weights.
[e] Annual update based on HCFA's recommendation that rates be frozen at 1993 level through January 1, 1994

Table II-4-3

Fiscal Year 1999 PPS Hospital Market Basket Expense Categories, Weights, Price Proxies, and Forecasts (In Percent)

Expense Category	Fiscal Year 1992 Weights	Price Proxy	Fiscal Year 1999 Forecast
Wages and salaries	50.24%	HCFA occupational wage index	3.0%
Employee benefits	11.15	HCFA occupational benefit index	2.9
Professional fees	2.13	ECI, compensation for professional specialty and technical workers	3.0
Utilities	1.54		0.9
Electricity	0.93	PPI, commercial electric power	0.5
Fuel oil, coal, etc	0.37	PPI, commercial natural gas	-1.0
Water and sewage	0.25	CPI, water and sewage maintenance	4.4
Professional liability insurance	1.19	HCFA professional liability insurance premium index	1.6
All other	33.75		1.9
All other products	24.83		1.5
Pharmaceutical	4.16	PPI, ethical (prescription) drugs	4.0
Food: direct purchase	2.31	PPI, processed foods and feeds	1.3
Food: contract service	1.07	CPI, food away from home	3.0
Chemicals and cleaners	3.67	PPI, industrial chemicals	-0.3
Surgical and medical instruments	3.08	PPI, medical instruments and equipment	0.5
Photographic supplies	0.39	PPI, photographic supplies	0.8
Rubber and plastics	4.75	PPI, rubber and plastics	0.2
Paper products	2.08	PPI, converted paper and paperboard products	3.3
Apparel	0.87	PPI, apparel	0.8
Machinery and equipment	0.21	PPI, machinery and equipment	0.7
Miscellaneous products	2.24	PPI, finished goods	1.2
All other services	8.93		3.0
Telephone	0.58	CPI, telephone services	1.5
Postage	0.27	CPI, postage	2.6
All other services: labor	7.28	ECI, compensation for private services occupations	3.2
All other services: nonlabor	0.80	CPI, all items	2.2
Total	100.00		2.6

SOURCE: Health Care Financing Administration, Office of the Actuary, and Standard & Poor's DRI, fourth quarter 1997 forecast.
NOTE: Weights may not sum to 100 percent due to rounding. Forecasts were prepared in December 1997.
CPI = consumer price index for urban consumers, ECI = employment cost index, PPI = producer price index.

basket increase. The PPS hospital market basket excludes capital goods, such as buildings and equipment, because Medicare pays for these expenses separately (see below).

Periodically, the Health Care Financing Administration (HCFA) revises the weights assigned to each market basket component. The market basket was last rebased for the fiscal year 1997 update, with weights reflecting 1992 hospital spending shares. Additional revisions were made to the market basket for fiscal year 1998. HCFA updated some of the weights and combined some of the cost categories to reflect data that were not available when the market basket was rebased the previous year.

Employee wages and salaries account for about half the total weight in the market basket. Price changes for this component are measured by a HCFA index that groups hospital workers into nine broad occupational categories, weighted to reflect their share of hospital labor expense (see Table II-4-4). Price changes for

Table II-4-4

Fiscal Year 1999 Wage and Benefit Component Price Proxies, Weights, and Forecasts, HCFA and MedPAC Versions (In Percent)

Employment Category and Price Proxy	Base-Year 1992 Weight		Fiscal Year 1999 Forecast	
	HCFA Index	MedPAC Index	Wages	Benefits
ECI - Professional specialty and technical workers	32.85%	32.85%	3.0%	2.8%
ECI - Managers and administrators	9.56	4.78	3.3	3.0
ECI - Sales workers	0.40	0.20	3.4	2.9
ECI - Administrative support including clerical workers	12.39	6.20	3.2	3.1
ECI - Craft and kindred workers	1.69	0.85	3.2	2.7
ECI - Machine operations and assemblers	0.44	0.22	2.7	3.2
ECI - Transport equipment workers	0.12	0.06	3.0	2.8
ECI - Non-farm laborers	0.08	0.04	2.8	2.8
ECI - Service occupations	9.60	4.80	3.2	3.1
ECI - Hospital workers	32.85	50.00	2.6	2.9
Total (HCFA)	100.00	–	3.0	2.9
Total (MedPAC)	–	100.00	2.8	2.9

SOURCE: Standard & Poor's DRI, fourth quarter 1997 forecast

NOTE: ECI = employment cost index

professional and technical workers, who account for 65 percent of hospital labor expenses, are measured using a 50:50 blend of the employment cost index (ECI) for all professional and technical workers and the ECI for hospital workers. These indexes measure changes in employee wages per hour worked. Corresponding economywide ECIs are used as price proxies for the eight other occupational groups. There is no 50:50 blending of these eight economywide indexes with the hospital ECI, however. The price change for benefits, the second largest market basket component with a weight of 11 percent, is measured similarly.

The 20 other market basket components together make up 39 percent of total market basket weights. Various types of products, such as pharmaceuticals and rubber and plastic goods, make up the largest share. Price changes for most of these components are measured using corresponding producer price indexes, which reflect price changes for goods sold in nonretail markets. The next largest group of components in the market basket is for services, many of which are purchased under contract. Most service costs are in a general category called "all other labor intensive services," which uses an ECI for service workers to measure price change. HCFA revised this component for the fiscal year 1998 update, adding business and computer services to make the market basket consistent with the data sources used to derive the weights. This component is now the third largest in the market basket, with a weight of 7.3 percent.

Fiscal Year 1999 PPS Hospital Market Basket Forecast

The PPS update for the coming year is based on a forecast of the increase in the market basket index developed under contract to HCFA by Standard & Poor's DRI. The most recent forecast of the PPS hospital market basket increase for fiscal year 1999 is 2.6 percent.[2] The prices of many market basket components are expected to rise faster than that. Employee wages and benefits, the two largest components, are both forecasted to increase by 3.0 percent in fiscal year 1999. Similarly, the cost of paper products is projected to grow by 3.3 percent. The prices for a number of other items actually are expected to fall: Fuel oil and coal costs, for instance, are projected to drop by 1.0 percent and medical instrument prices, by 0.3 percent. Since the market basket forecast used for this report was made in December 1997, it will probably change as later data become available. HCFA will use a June 1998 forecast to update payments for fiscal year 1999.

Adjustment for Difference in Internal/External Wage Proxy Mix

The Commission's update framework includes an adjustment to allow its update recommendation to reflect a market basket that accords greater weight to hospital industry wage and benefit price proxies than does HCFA's market basket. Like ProPAC, MedPAC believes that changes in compensation rates in the market basket should reflect expected wage and benefit growth in the hospital industry and the general economy equally.

[2] Market basket forecasts are updated quarterly. This forecast was made in December 1997.

In HCFA's market basket, however, this equal internal and external wage and benefit proxy mix applies only to professional and technical workers. HCFA's version, therefore, accords less overall weight to hospital industry wages. The hospital industry measure makes up 50 percent of the wages and benefits components in MedPAC's version, compared with about 33 percent in HCFA's (see Table II-4-4).

Because of these differences, the forecasted increases in the two market baskets can diverge. HCFA's market basket, however, is the one used to set the annual updates. MedPAC's update framework therefore uses HCFA's version of the market basket, but also includes an adjustment to allow the update to reflect discrepancies between the two forecasts. For fiscal year 1999, the forecasted increase in MedPAC's version of the market basket is 2.5 percent, compared with 2.6 percent for HCFA's version. To reflect this difference, the Commission includes a downward adjustment of 0.1 percentage points in its update recommendation.

Correction for Fiscal Year 1997 Forecast Error

There may be sizable differences between the forecasted increase in the market basket index and actual input price inflation in any given year. Substantial discrepancies between forecasted and actual increases in the market basket index can result in large overpayments or underpayments to hospitals under PPS. The forecast error correction factor is intended to remove the effects of forecast errors from future PPS payments.

The forecast error is determined at the end of each year, using data on the actual increase in the market basket index for that year. Because of the timing of these data, there is a two-year lag in the correction for market basket forecast errors. The fiscal year 1999 update recommendation, therefore, includes a correction factor for the error in the fiscal year 1997 market basket forecast.

The forecasted market basket increase used to calculate the update factor for the fiscal year 1997 PPS payment rates was 2.5 percent. The actual increase in the fiscal year 1997 market basket, however, was only 2.1 percent, so the forecast error correction factor is 0.4 percentage points.

Several factors contributed to the fiscal year 1997 market basket forecast error. One was a lower-than-expected increase in benefit prices, which rose only 1.5 percent rather than the projected 3.1 percent. Additionally, wages grew by 2.8 percent instead of the forecasted 3.1 percent. Increases in the various producer price indexes used to measure price changes for items like medical instruments and supplies and photographic supplies also all went up less than expected. This is the eighth consecutive year in which the forecasted index was substantially higher than the actual increase in prices. The fiscal year 1997 forecast error, however, is smaller than in previous years.

Scientific and Technological Advances

The Commission's update framework includes an allowance for the cost-increasing effects of scientific and technological advances that enhance quality of care for Medicare beneficiaries. It is intended to estimate changes in resource use in the coming fiscal year resulting from the adoption of new technologies that affect operating and capital costs. The S&TA allowance is based on a technology-specific approach. Technologies that are expected to increase hospital operating and capital costs in the update year are examined.

This analysis of S&TA costs builds on work undertaken by ProPAC. For fiscal year 1995, ProPAC contracted for a comprehensive review of hospital technologies (Abt Associates, 1994).[3] In subsequent years, ProPAC took a more qualitative approach involving an evaluation of technologies identified in previous analyses and a review of current medical literature. MedPAC conducted a similar review this year.[4]

Technologies Included in the Analysis for Fiscal Year 1999

The Commission's review of scientific advances affecting operating and capital costs concentrated on four broad categories that were identified as significant contributors to S&TA costs in the fiscal year 1995 analysis: information systems; cardiovascular drugs and devices; biotechnology; and radiology, imaging, and nuclear medicine. This year's review suggests that advances are slowing in areas that had made important contributions to S&TA operating costs in the past. At the same time, substantial advances in hospital information systems will likely continue to develop and add to hospital costs.

[3] The contractor's analysis included technologies if they were emerging as important treatment options (used for between 5 percent and 75 percent of all potentially affected patients); were expected to have a significant increase in a hospital's inpatient costs; and were thought to enhance quality of care. Estimates of facility per treatment costs were multiplied by the number of eligible Medicare patients and percentage of Medicare admissions expected to use the technology. The expected incremental cost of all selected technologies was summed and distributed over the expected total payments for that year to obtain the incremental cost increase. Costs and diffusion rates for the chosen technologies were estimated by medical and industry experts and reviewed by a technical advisory panel.

[4] *The Hospital Technology Scanner, FDA Medical Bulletin, Modern Healthcare, Journal of the American Medical Association, New England Journal of Medicine,* and selected online sources were used for this review.

Information Systems

The Commission believes that information systems will be the primary source of increased S&TA costs in fiscal year 1999. Hospitals are investing more resources in new information systems, particularly those systems that provide online clinical data. In addition, with the growth of integrated health care organizations, hospitals are purchasing and implementing intranets to allow for the easy transfer of data across providers, as well as software capable of linking disparate computer systems.

Telemedicine—the use of electronic communication and information technologies to provide clinical care at a remote site—is becoming an important technology for rural hospitals (Office of Rural Health Policy, 1997). Telemedicine may be used to assist providers in delivering care to patients in both inpatient and outpatient settings. Although telemedicine is currently used more frequently in the outpatient setting, experts believe that it will be used more widely in inpatient settings in the coming year.

Reconfiguring computer systems for the year 2000 is also likely to require significant investments by hospitals. Computer programs that use dates to operate hospital equipment will need to be corrected in order to interpret the two-digit year indicator 00 as 2000 rather than 1900. Many of the systems affected by this computer programming issue are of the financial/accounting variety. The year 2000 problem, though, is also likely to affect computers used for patient care, for example, computer software involved in measuring radiation therapy treatments as well as that used for converting, transmitting, or storing medical images. Hospitals will be devoting significant resources to solving this problem through fiscal year 1999, and the Commission intends to monitor the situation over the coming year.

Cardiovascular Drugs, Devices, and Techniques

In recent years, ProPAC identified cardiovascular technologies as significant contributors to hospital cost increases, primarily because of the rapid diffusion of devices used in coronary angioplasty such as stents and balloon dilatation catheters. MedPAC does not believe, however, that these devices will increase hospital costs as much this year as previously, because prices have dropped as a result of new products entering the market. In addition, stent insertion was included in a higher-priced diagnosis-related group (DRG) beginning in fiscal year 1998.[5] The Commission also believes that advances being made in magnetic resonance angiography and pharmacologic therapy will have only a modest effect on hospital costs in fiscal year 1999.

Table II-4-5

Recommended Adjustments to the Hospital Update to Reflect Scientific and Technological Advances (In Percent)

Fiscal Year	Operating Update	Capital Update
1986	1.5 - 2.0 %	**
1987	0.7	**
1988	0.5	**
1989	0.5	**
1990	0.3 *	**
1991	0.7 *	**
1992	0.7	**
1993	1.0	**
1994	1.0	0.4 %
1995	0.3	0.9
1996	0.3	*
1997	0.1 - 0.6	**
1998	0.4	0.4

SOURCE: Prospective Payment Assessment Commission, *Report and Recommendations to the Congress*, March 1, selected years.

* ProPAC did not set explicit allowances for advances in science and technology. Rather, it set a net allowance of zero for S&TA and productivity.

** ProPAC did not recommend a specific capital update for these years.

Biotechnology

Recent advances in biotechnologies include the platelet inhibitor abciximab, which has been shown to reduce the incidence of cardiac events in high-risk patients following angioplasty. New radiolabeled antibodies used to detect the spread of lung cancer, prostate cancer, colon cancer, and to identify myocardial injury are important diagnostic tools that will also raise costs. Because these technologies would be used to treat a small patient population, however, they will account for minimal aggregate cost increases for hospitals.

Radiology, Imaging, and Nuclear Medicine

Recent developments in radiology, imaging, and nuclear medicine primarily include improvements and further applications for magnetic resonance imaging (MRI), positron emission tomography, ultrasound, computed tomography, and radionuclides. In addition, image-directed therapy is being performed more commonly for treatment of some vascular conditions (Evens 1997). The continued diffusion of these advances, however, will have only a small impact on hospital costs in the coming fiscal year.

[5] Insertions of stent, which had been included in DRG 112 (percutaneous cardiovascular procedures) since fiscal year 1996, was moved to DRG 116 (other permanent cardiac pacemaker implant or AICD lead or generator procedures without principle diagnosis acute myocardial infarction, heart failure, or shock) in fiscal year 1998, to reflect the greater resources used in performing this procedure.

Impact of S&TA on Hospital Costs in Fiscal Year 1999

The Commission's review of hospital technology suggests that adoption of advances is slowing in areas that made significant contributions to S&TA in the past. At the same time, more important advances are occurring in the information systems area than ever before. While the areas of growth have changed, it appears there will be no significant change in the overall rate of adoption of cost-increasing technologies hospitals will make in fiscal year 1999. The Commission, therefore, believes that an S&TA adjustment of up to 0.5 percent is justified. Such an adjustment is comparable to those recommended in previous years (see Table II-4-5).

Productivity Growth and Change in Hospital Product

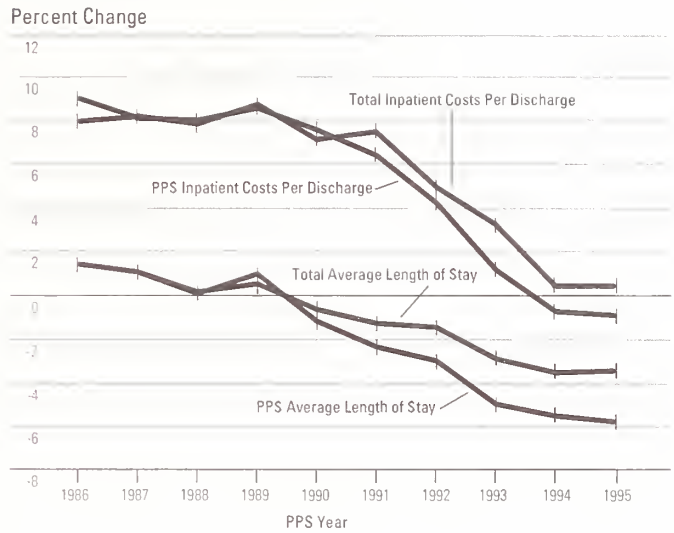
The productivity adjustment has traditionally been intended to give hospitals a financial incentive to improve productivity, either by using existing inputs more efficiently or by adopting cost-decreasing technologies. This adjustment is a policy target, indicating the productivity growth MedPAC believes hospitals can reasonably be expected to achieve in the coming year. For the last two years, the PPS update framework has also included a separate adjustment to reflect changes in the nature of services hospitals provide during inpatient stays. It compensates for the difference between the set of services reflected in the PPS payment rates and the services that are actually delivered today in the acute inpatient setting.

In broad terms, productivity is measured as the number of inputs used per unit of output. Generally, the output (or product) of hospital inpatient care is thought of as completed stays, best measured as the number of case-mix adjusted discharges. In recent years, however, the service content of the average hospital discharge has changed markedly. Lengths of stay have dropped sharply across all DRGs, especially those associated with post-acute care use. The role of acute inpatient care has changed, therefore, as the supply of post-acute care has expanded and an increasing number of patients are discharged from the hospital to the care of other Medicare providers. The adjustment for hospital product change was developed to account for the effect on PPS payment rates of these changes in how services are delivered.

This section presents the trend in several indicators related to hospital productivity growth and product change. The first analysis tracks the change in inpatient costs per discharge and average length of stay for both Medicare and all patients. Next, a broader model of the factors contributing to changes in hospital resource use is described. The third analysis provides data that could be used to extrapolate the Medicare cost and length of stay trends through 1996 and year-to-date 1997. The final two sections lay out considerations for the Commission's decision on the level of the two adjustments for fiscal year 1999, based on data from the resource use model as well as the level of productivity growth in the general economy. An appendix to the chapter provides more information on the data sources and methods used for the expanded model of hospital resource use.

Figure II-4-1

Annual Change in Total and PPS Inpatient Costs Per Discharge and Average Length of Stay, 1986-1995



SOURCE: Medicare Payment Advisory Commission analysis Medicare Cost Report data.

NOTE: The total inpatient costs per discharge and average length of stay data cover all inpatient services. This includes services delivered in both acute and other inpatient units (hospital-based skilled nursing, transitional care, and so forth), and care provided to patients covered by all payers as well as uninsured patients. Both total and PPS costs exclude graduate medical education expenses. PPS years correspond roughly to government fiscal years.

Trend in Inpatient Costs Per Discharge and Average Length of Stay

The annual increase in inpatient costs per discharge for all patients has fallen dramatically over the decade ending in 1995, from around 9 percent in the late 1980s to only 0.4 percent in both 1994 and 1995 (see Figure II-4-1). The growth in PPS costs per discharge mirrored that of all-payer costs through 1990, but has been lower in every year since then. In the last two years for which data are available, PPS costs per case have actually dropped.[6]

[6] To support this analysis, MedPAC has developed a new inpatient costs per discharge measure that can be applied to patients covered by PPS and to all patients receiving inpatient care in hospitals paid under PPS. For both groups of patients, this indicator includes all Medicare-allowable cost elements related to patient care but excludes graduate medical education expenses. In addition, the same data source, hospital sample, and time periods were used in both cases. See the appendix to this chapter for additional information.

Table II-4-6

Average Annual Change in Variables Related to Productivity Growth and Change in Hospital Product, 1986-1995

	Real Resource Use Per Standard Unit of Output[a]		Length of Stay[b]		Service Intensity[c]		Real Resource Use Per Unit of Services[c]
	Change in:		Change in:		Change in:		Change in:
Years	Inputs / Discharges	=	Days / Discharges	+	Services / Days	+	Inputs / Services
1986 to 1989	2.1%		0.8%		2.2%		-0.7%
1990 to 1992	2.1		-1.3		1.5		2.0
1993 to 1995	-2.2		-3.8		1.1		0.5

SOURCE: Medicare Payment Advisory Commission analysis of Medicare Cost Report and market basket data from the Health Care Financing Administration, and case-mix data from the National Discharge Abstract Survey

NOTE: Summation of the changes in length of stay, service intensity, and real resource use per unit of services to equal the change in real resource use per standard unit of output may not be exact due to rounding. See the chapter appendix for additional information on data and methods as well as annual results.

[a] Real resource use is measured as inpatient costs per discharge adjusted for price inflation in the inputs hospitals use to produce inpatient care. The standard units of output are inpatient discharges adjusted for real changes in case mix.
[b] The patient day and discharge measures used in calculating length of stay are both adjusted for real case-mix change.
[c] Services (days of nursing care, surgeries, lab tests, and so forth) are measured as total inpatient charges adjusted for inflation in service prices.

The yearly changes in average length of stay and inpatient costs per discharge have followed remarkably similar downward trajectories, providing compelling evidence that falling lengths of stay have been instrumental in bringing about the slower cost growth. PPS and overall length of stay held roughly constant during the late 1980s, when both PPS and total cost per case growth hovered around 9 percent. The decline in total length of stay reached about 4 percent in both 1994 and 1995, but the drop in PPS length of stay was even greater—more than 6 percent in each of these years. The difference between the annual changes in per case costs and length of stay has narrowed over time, however, suggesting that other cost-reducing factors have come into play as well. One of these is lower inflation in the general economy, and BLS data show that the growth in hospital wage levels has also fallen relative to other industries. A key question, addressed below, is the extent to which greater productivity growth has also played a role.

Expanded Model of Hospital Resource Use

MedPAC has developed a model that sheds light on the influence of productivity and hospital product change on the resources, or inputs, required to produce each unit of hospital output, or completed stay. Inputs (staff hours, food, medical supplies, and so forth) are measured as real (inflation-adjusted) costs. Completed stays are measured as discharges adjusted for real changes in case mix (that is, changes that reflect patient resource requirements—see the discussion of case mix in the last section of this chapter).

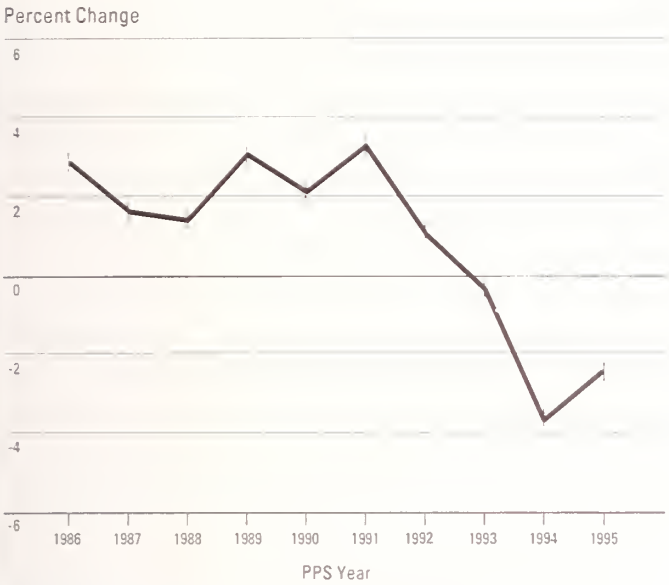
The discharge is the ultimate measure of hospital output in the context of PPS, as reflected in the decision to use it as the unit of payment. As referred to above, however, length of stay has been a major factor in the recent slowdown in costs per discharge. To focus on this factor, length of stay has been included as a separate component in this analysis of productivity and product change.

Each hospital stay (or day) comprises a set of services (nursing care, therapy procedures, lab tests, surgeries, and so forth), which could be termed the hospital's intermediate product. The intensity of care provided in the hospital can be represented as the volume of services per day or per stay. From this perspective, hospitals' intermediate productivity would be measured as the inputs required to produce each unit of services. Measuring the change in productivity, however, assumes that the quality of hospital care has held constant. While there is no evidence that quality has deteriorated in recent years, the lack of sufficiently rigorous quality measures makes it difficult to be certain that this assumption is valid.

The production of a hospital discharge can then be viewed as combining three components: days per discharge, services per day, and inputs per unit of services (see Table II-4-6). These factors are not independent, however. When the number of days in a patient's stay is reduced and the costs of many services (particularly surgery) are unchanged, the measured intensity of services per day will inevitably increase. Netting the decrease in length of stay and the increase in intensity provides a more accurate indicator of the change in hospital product than the length of stay change alone.

Figure II-4-2

Annual Change in Real Resource Use Per Standard Unit of Output in PPS Hospitals, 1986-1995



SOURCE: Medicare Payment Advisory Commission analysis of Medicare Cost Report and hospital market basket data, and case mix data from the National Hospital Discharge Survey

NOTE: Real resource use is measured as inpatient costs per discharge adjusted for price inflation in the inputs hospitals use to produce inpatient care. The standard units of output are inpatient discharges adjusted for realchanges in case mix

Although the rate of change in real resource use per standard unit of output has varied considerably from year to year, the general trend toward slower growth in the use of resources over time is evident (see Figure II-4-2). When the annual change in this measure is disaggregated into the three components described above—length of stay, service intensity per day, and intermediate productivity—three distinct periods emerge in hospitals' transition from a high cost-growth to a low cost-growth industry.

In the first period (1986 through 1989), real resource use rose by 2.1 percent each year, producing nominal per case cost growth of about 9 percent annually. Two of the three factors in the model contributed to this outcome: length of stay edged up (0.8 percent a year) while intensity per day accelerated substantially (2.2 percent a year). Most striking is the intensity increase, which may be linked at least partly to the widespread implementation of such expensive diagnostic procedures as computerized tomography and MRI scans. The increases in length of stay and intensity were partially offset by a small decline in the real resources used per unit of services (that is, services were produced more efficiently).

The second and third periods (1990 through 1992 and 1993 to 1995), contrast sharply. Real resource use per case continued to go up at the rate of 2.1 percent per year in the second period, but declined by 2.2 percent annually in the third. The most important variable in this performance difference appears to be length of stay reduction, which was modest through 1992 (–1.3 percent annually) but very large thereafter (–3.8 percent a year). But the real resources used in producing services also played a role, rising rather substantially before 1992 (2.0 percent a year) but only modestly after that (0.5 percent).

It may seem surprising that the efficiency with which services are produced still fell slightly from 1993 to 1995, when the industry's overall cost growth was the lowest observed in nearly a quarter century. But it appears that "diminishing returns to scale" is the driving factor in this difference. The overall service content of hospital admissions (combining the length of stay and intensity terms) dropped by 2.7 percent a year after 1992 (see Table II-4-7). With the number of discharges holding fairly steady, this meant that the overall volume of services hospitals produced fell, and it is always difficult to improve productivity in the face of declining output volume.

Recent Changes in Costs Per Discharge and Length of Stay

The data needed to quantify the real resource use model are available only through 1995, because they are dependent on the availability of Medicare Cost Reports. However, the American Hospital Association's (AHA) National Hospital Panel Survey is useful in assessing more recent developments, despite differences in the construct of the measures used.[7]

The AHA's cost measure is total expenses per outpatient-adjusted admission, which means that it will be influenced by developments in hospitals' outpatient departments to a greater degree than MedPAC's inpatient measure. The AHA's measure of length of stay for patients over age 65, on the other hand, is calculated the same way as the one for PPS patients. The only difference is in the patients covered. The AHA's indicator includes a few elderly people who are ineligible for Medicare as well as patients in PPS-excluded psychiatric and rehabilitation units, but omits disabled Medicare beneficiaries who are under 65.

Table II-4-7

Average Annual Change in Hospital Product Component Terms, 1986-1995

	Hospital Product		Length of Stay[a]		Service Intensity[b]
	Change in:		Change in:		Change in:
	Services		Days		Services
Years	Discharges	=	Discharges	+	Days
1986 to 1989	2.9%		0.8%		2.2%
1990 to 1992	0.2		-1.3		1.5
1993 to 1995	-2.7		-3.8		1.1

SOURCE: Medicare Payment Advisory Commission analysis of Medicare Cost Report and market basket data from the Health Care Financing Administration, and case-mix data from the National Discharge Abstract Survey.

NOTE: Summation of the changes in length of stay and service intensity to equal the change in hospital product may not be exact due to rounding.

[a] The patient day and discharge measures used in calculating length of stay are both adjusted for real case-mix change.
[b] Services (days of nursing care, surgeries, lab tests, and so forth) are measured as total inpatient charges adjusted for inflation in service prices.

The AHA data suggest that fiscal year 1996 was similar to 1995 (see Figure II-4-3). This would imply that when PPS data become available, they are likely to show a continuation of the previous trend in both per case costs and length of stay. But the data indicate that the industry's performance in fiscal 1997 may have changed in two important ways. First, the annual growth in total expenses per adjusted admission has fallen to a new low—just 0.2 percent. Even then, the increase was confined to the last three months of calendar 1996—the figure for January through September 1997 is -0.2 percent. At the same time, although still substantial, the decline in length of stay for those over age 65 was barely half the drop of recent years—only 3.1 percent.[8]

These changes suggest that factors other than length of stay could now be playing a more prominent role in holding down costs. Wages seem to be one of these factors; BLS data show that, relative to other industries, the average increase in hospital wages was even lower in the first half of 1997 than it was from 1992 to 1996. Greater productivity growth also appears to have contributed to the industry's improved performance; AHA Panel Survey data indicate that hospital labor productivity rose significantly more in 1997 than in any other year of the decade.

Considerations for the Commission's Productivity Adjustment

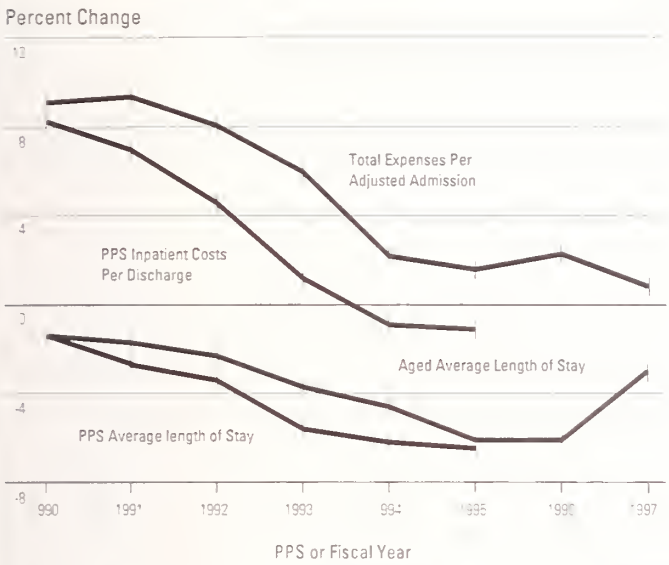
The Commission believes that it is reasonable to expect hospitals to produce services more efficiently from one year to the next without affecting the quality of care provided. One potential standard for setting a productivity growth target for PPS hospitals is the productivity gains achieved in the general economy. Unfortunately, a BLS measure reflecting all inputs is available only through 1994. But a labor productivity measure is available through mid-1997, and MedPAC used the trend in that indicator to estimate the more recent change in the multifactor measure. The results indicate that productivity generally declined in the late 1980s through 1991 (the end of the nation's recession), but has risen at the rate of 0.7 percent a year since then (see Table II-4-8).

After considering these data and the limits of making comparisons among industries, the Commission set a range of 0.3 percent to 0.7 percent for expected productivity growth—and hence the productivity adjustment—for fiscal year 1999. Even the lower end of this range is above the intermediate productivity growth hospitals achieved from 1993 to 1995—a 0.5 percent yearly decline in productivity (or increase in the real resources used per unit of services). However, past update recommendations have included an S&TA allowance that would roughly offset the productivity adjustment. This would net to zero productivity growth, which is not far from the 0.5 percent decline actually observed. In addition, the relationship between product change and intermediate productivity growth in MedPAC's analysis strongly suggests that in the absence of the length of stay declines of recent years, hospitals could match the productivity standard set by the general economy.

[8] While the reduced rate of decline in length of stay shown in Figure II-4-3 is for the aged population, the same phenomenon is seen in the length of stay for all patients.

Figure II-4-3

Possible 1996 and 1997 Annual Change in PPS Inpatient Costs Per Discharge and Average Length of Stay



SOURCE: Medicare Payment Advisory Commission analysis of data from the American Hospital Association National Hospital Panel Survey and Medicare Cost Reports

NOTE: The total expenses per adjusted admission and aged length of stay data are based on community hospitals (which includes some PPS-excluded facilities) and government fiscal years. The PPS inpatient costs per discharge and PPS length of stay data are based on PPS hospitals and PPS years.

Table II-4-8

Average Annual Productivity Change in the General Economy

Years	Change in Productivity
1987-1991	-0.3%
1992-1994	0.7
1992-1997 (estimated)	0.7

SOURCE: Medicare Payment Advisory Commission analysis of data from the Bureau of Labor Statistics.

NOTE: Based on multifactor productivity in private non-farm business through 1994. The values for 1995 through 1997 were estimated from the trend in output per person (labor productivity) in nonfarm business. The 1997 observation for labor productivity is based on January to June compared to the same months in the previous year.

Considerations for the Commission's Product Change Adjustment

Based on the data in Table II-4-7, the cumulative product change (reduction in the service content of discharges) between 1993 and 1995 is estimated at 8.3 percent (2.7 percent a year for three years). In addition, the trends shown in Figure II-4-2 suggest that product change continued at the same rate through 1996, bringing the estimate of cumulative change to 11.2 percent. Pending extension of the resource use model to more recent time periods, the conservative approach is to estimate no additional product change in 1997. The smaller length of stay reduction indicated by the available data for 1997 might possibly be offset entirely by the increase in the intensity of services per day.

Thus, a product change adjustment of as much as 11.2 percent could be called for to account for the costs of services reflected in the payment rates that are no longer being provided in an acute care setting. An estimated 2 percentage points has already been implemented through ProPAC's fiscal year 1998 product change adjustment, which led to the zero update recommendation that Congress adopted in the BBA. Subtracting out that first installment leaves a maximum cumulative adjustment of 9.2 percent.

Two factors, length of stay and service intensity, might mitigate against the full cumulative adjustment, however. Both are related to how the observed product change may have occurred.

Generally, hospitals can achieve reductions in length of stay in three ways:

- Discharging the patient at an earlier point in the episode of illness. The care that is still required would then be furnished by a post-acute care provider (rehabilitation facility, skilled nursing facility, or home health agency); by an ambulatory care provider (hospital outpatient department, other clinic, or physician); or even by non-paid care givers in the home.
- Introducing improvements in management processes that allow the same set of services to be delivered in less time. Examples are reducing the turnaround time for diagnostic procedures, better surgical suite scheduling, and more effective discharge planning.
- Implementing technological improvements, such as new anesthetic agents and endoscopic surgery, that allow the patient to reach the same level of functioning in fewer days.

It seems evident that an adjustment would be appropriate to account for declining length of stay due to care shifted from the latter days of an acute stay to other settings. But it is equally clear that shorter stays resulting from improved management processes is a form of productivity improvement. As such, the impact has already been accounted for through the productivity adjustments included in past updates. Whether this is also the case for the third phenomenon—shorter stays resulting from technological changes in the delivery of care—is a matter of judgment. Improvements in the delivery of care can bring about systemwide savings, by substituting services that will be less costly to Medicare or eliminating services for which Medicare would otherwise pay. The question is whether this form of product change was within the scope of the productivity adjustments included in past payment updates, given that no distinction between product change and productivity improvement was made at the time.

The other factor that would appear to mitigate against a full adjustment for cumulative product change relates to service intensity. As discussed earlier, an increase in the average intensity of services per day is a natural outgrowth of a drop in length of stay. Consequently, it would be reasonable to expect that large intensity increases would accompany large length of stay declines, and vice versa. But the analysis shows that this has not been the case over the last decade. The rise in intensity was the smallest between 1993 and 1995, when the drop in length of stay was the greatest. This suggests that one of hospitals' strategies for cutting costs has been to find ways to minimize the number or the costliness of the mix of ancillary services provided to inpatients. Once again, while clearly a form of product change, this phenomenon may have already been accounted for in past productivity adjustments.

The Commission believes that, although it would be difficult to quantify, there is overlap between the cumulative product change documented by the resource use model and the productivity improvement expected of hospitals through past update decisions. At the same time, the cumulative product change may be underestimated because the decline in length of stay across all payers was used in the Commission's analysis instead of the larger drop for Medicare patients.[9] There clearly has been enough product change beyond the amount already accounted for to justify an adjustment of –1 percent to –3 percent for fiscal year 1999, and further adjustments will be considered in the future.

Adjustment for Case-Mix Change

PPS operating and capital payments for each Medicare case reflect the relative costliness of cases in the same DRG compared with the national average for all Medicare cases, as represented by the DRG weight. The Medicare case-mix index is the average DRG weight for all cases paid under PPS. Because the DRG weight determines the PPS payment for each case, an increase in the national aggregate CMI results in an equal percentage jump in aggregate hospital payments.

The CMI may rise from year to year because of real growth in case mix or because of upcoding. Real case-mix change reflects greater patient resource requirements resulting from changes in the mix of patients or their treatment. Examples of such change include increases in the average severity of illness of patients who are admitted or in the complexity of services provided on an inpatient basis. Upcoding is an improvement in medical record documentation or a change in coding practices that results in assignment of cases to higher-weighted DRGs without increases in patient resource requirements.

The Commission believes that hospitals should be compensated for real case-mix change, but not for upcoding. MedPAC's update recommendation reflects this by including a case-mix change adjustment consisting of two parts. The first is a downward adjustment to remove the portion of CMI increase attributable to hospital coding practices from the base payment rates. This adjustment reflects the difference between total CMI growth and real across-DRG case-mix change. The second is an adjustment to account for real case-mix growth that is not captured by the CMI, referred to as within-DRG case-complexity change.

DRG Case-Mix Index Change

The rate of increase in the case-mix index has been variable over time. The CMI grew rapidly in the first year of PPS, as hospitals responded to incentives for more complete coding (see Figure II-4-4). Growth generally slowed over time, but jumped after major changes in the DRG classification rules that occurred in 1988 and 1991. Such changes provide hospitals with additional opportunities to improve their medical record documentation and coding practices, resulting in higher CMI increases.

MedPAC uses Medicare claims data to develop estimates of CMI change. Preliminary data from discharges indicate that during 1997 the CMI grew about 1.8 percent. The Commission projected CMI growth in fiscal year 1998 using historical trends and evaluating the potential effects of changes in DRGs on how hospitals code cases. Since there have only been minor modifications made to the DRGs recently, the Commission projects that the CMI will increase by 1.7 percent in 1998, continuing the recent trend in CMI growth.

Coding Change

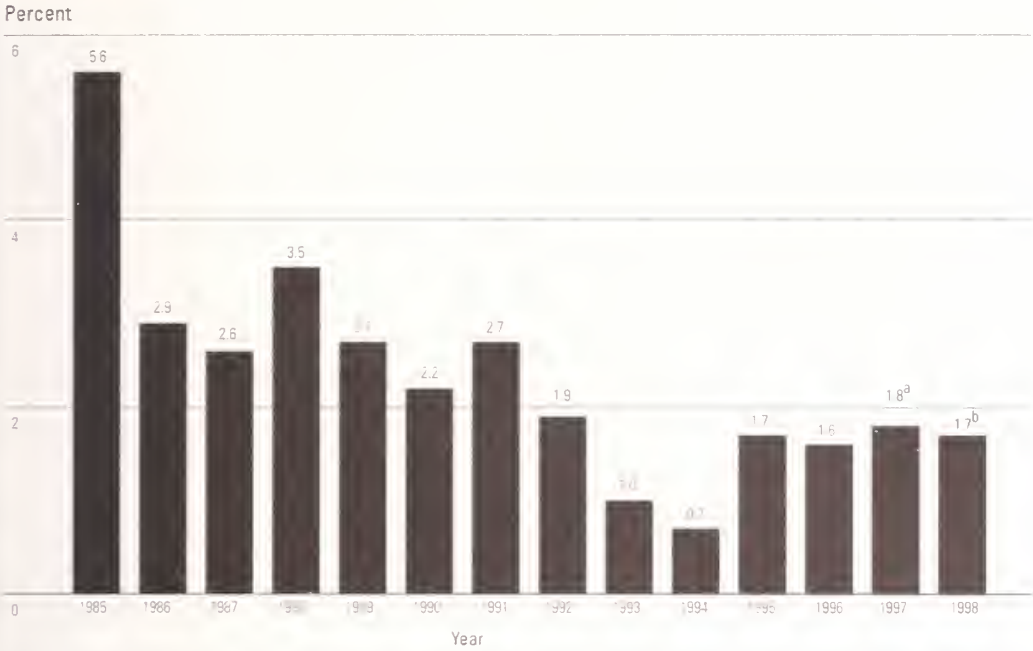
The Commission bases its coding adjustment on an estimate of the increase in real resource requirements associated with growth in the CMI. Research in the late 1980s found that real case-mix change was stable at about 1.5 percent to 1.6 percent even as total case-mix change varied (Carter et al. 1990; Carter et al. 1991).[10] Major modifications to the DRG classification system, such as the creation of new DRGs or revisions in the rules that lead to reassignment of cases from one DRG to another, provide incentives and opportunities for hospitals to alter coding practices. Such changes can increase the reported case mix without commensurate growth in resource requirements. The effect of coding change on the CMI increase can be large, but diminishes over time if no other major refinements to the DRGs are made.

[9] The data needed to quantify the Commission's resource use model for Medicare patients alone are not available in the applicable Medicare Cost Reports. A new cost report form implemented in 1996 will remedy this problem for future analyses, however.

[10] This research studied CMI change from 1986 to 1987 and from 1987 to 1988. HCFA now has a larger data base that could be used to update this analysis, but thus far has not done so.

Figure II-4-4

Annual Medicare Case-Mix Index Change, 1985-1998 (In Percent)



SOURCE: Medicare Payment Advisory Commission analysis of MedPAR and other data from the Health Care Financing Administration

[a] Estimation
[b] Projection

From 1992 on, CMI growth has been less than 2 percent a year, falling as low as 0.7 percent in 1994. Because there have been no major modifications to the DRGs since 1991, most of the recent growth in CMI likely has been real. Consistent with the earlier findings of 1.5 percent to 1.6 percent real growth, the Commission believes most of the projected 1.7 percent increase in the CMI for 1998 likely is real, with 0.2 percentage points, at most, due to coding.

Within-DRG Case-Complexity Change

Real resources required to care for hospitalized Medicare beneficiaries can increase due to changes in the distribution of cases among DRGs and increases in the average resource requirements of cases assigned to specific DRGs. The former change results in a real increase in the case-mix index. The latter change is described as an increase in within-DRG case complexity.

Researchers have used a variety of data and methods in attempts to measure within-DRG case complexity. Research conducted for ProPAC found that estimates of within-DRG case complexity increased from 0.5 to 1.1 percentage points a year from 1987 through 1992, when CMI growth averaged 2.6 percentage points a year (SysteMetrics 1994). These estimates, however, were also influenced by changes in hospital coding behavior, and thus may overestimate real within-DRG complexity growth. After 1992, upcoding declined and CMI growth slowed. Real within-DRG case-complexity change is also likely to be reduced as improvements are made to the DRGs and hospitals code cases better. Since 1992, ProPAC's estimates of real within-DRG case-complexity change have been 0.4 percentage points or less. Based on current data, MedPAC believes that an adjustment of up to 0.2 percentage points could be justified for fiscal year 1998.

PPS Capital Rates and Update

In fiscal year 1992, Medicare began paying for hospital inpatient capital costs (interest, rent, depreciation, taxes, insurance, and similar expenses for plant and fixed equipment and for movable equipment) based on prospectively determined, per case rates. Previously, reimbursement had been based on actual capital costs. During the 10-year transition to a single capital rate, payments reflect both hospital-specific costs and a single federal capital payment rate. Fiscal year 1999 will mark the eighth year of this transition.

Medicare Capital Payment

During the transition, hospitals are paid aeeording to a fully prospective method or a "hold-harmless" method. The method used for each hospital depends on a comparison of the facility's hospital-specifie rate and the federal payment rate. A faeility's hospital-specific rate is its updated 1989 Medicare-allowable inpatient capital cost per discharge. The federal rate is the updated 1989 nationwide average Medicare cost per discharge. Hospitals with a 1992 hospital-specific rate below their federal rate are paid under the fully prospective method; others are paid under the hold-harmless method. For each case, payment is adjusted for the relative costliness of the case (the DRG weight) and factors reflecting the hospital's location, teaching status, and disproportionate share status.

The fully prospective method sets payments as a blend of the hospital-specific and federal rates. In fiscal year 1999, payments to hospitals under this method will be based on 20 pereent of the hospital-specific rate and 80 percent of the federal rate. Hospitals paid under the hold-harmless method have per case payments that equal the federal rate or a blend of payments for old and new capital, whichever is greater. Old capital costs are associated with assets purchased before the end of 1990 and put in use by September 30, 1994. Payment for old capital generally equals 85 percent of actual costs (100 percent for sole community hospitals). All other capital costs are defined as those for new capital. Payment for new capital equals the federal rate times the share of total hospital capital costs attributable to new capital. As a hospital's old capital depreciates, its new capital share increases and its hold-harmless payment approaches and finally equals the federal rate. At that point, the payment rate for the facility equals the federal rate.

Capital Update

As with payment for operating expenses, capital rates are updated annually. Unlike the PPS operating update, however, the PPS capital update is not set in law. For the first four years of the transition (from fiscal year 1992 through fiscal year 1995), historical cost increases were used to update the federal and hospital-specific rates. Beginning in fiscal year 1996, the Seeretary of Health and Human Services used an update framework for such adjustments.

The Commission's PPS capital update framework is similar to the PPS operating update framework. It includes factors for capital asset price changes (the capital market basket), forecast error correction, scientific and technological advances, productivity, product change, and case-mix change. Some of these components have different values when applied to capital. The framework also includes a discretionary financing policy adjustment for use in extended periods of unusually high or low interest rates. The market basket used in MedPAC's framework is very different from HCFA's capital market basket.

The Commission's update framework is intended to allow hospitals to aceumulate, over time, adequate resources for future capital purehases. Facilities are then able to use Medicare capital payments to purchase new assets or to build reserves to finanee future asset purehases.

Capital Market Basket

MedPAC's eapital market basket adjusts for projected increases in the prices of capital assets purchased by hospitals. It measures the one-year change in the price of a fixed mix of eapital goods, including buildings and fixed equipment, movable equipment, and other capital-related costs.

The Commission's market basket refleets the aequisition eost of new capital assets. It differs substantially from HCFA's eapital market basket, which measures anticipated inereases in annual expenses related to the existing capital stoek. HCFA's market basket is virtually unaffected by ehanges in prices hospitals will have to pay to purchase new assets in the eoming year. Annual eapital expenses (primarily depreciation and interest) are associated with a hospital's entire stoek of capital. Mueh of this stock was purchased when Medieare reimbursed hospitals for their aetual capital costs and thus reflects historieal capital spending.

The Commission believes it is inappropriate to set updates to future capital payment rates based on the annual expenses resulting from historical capital spending. Sueh updates should reflect changes in the purchase price of new capital assets.

Choice of Price Proxies—MedPAC uses forecasts of three priee indexes in its market basket. The Boeckh building cost index subindex for apartments and office buildings (institutional eonstruetion) is used as a price proxy for the types of buildings and fixed equipment hospitals generally purchase. The Marshall and Swift hospital equipment index, a measure of movable equipment prices, is specially designed for hospitals. The market basket uses the consumer price index (CPI) for residential rent to measure priee changes for other capital-related costs. The market basket gives a single-year projection of price change.

Price Proxy Weights—The three price proxies are weighted in the market basket to reflect their contribution to hospital capital costs in 1992: building and fixed equipment depreeiation (0.441), movable equipment depreciation (0.510), and annual outlays for other capital-related costs (0.049). In the absence of accurate and current information on actual eapital purchases, these historieal shares are the best available measure of the proportions for future purchases. The development and updating of these weights is analogous to the treatment of expenditure share weights in the market basket used for operating payments.

Financing Policy Adjustment

The Commission's update framework includes a financing policy adjustment that could be used when current interest rates differ markedly from their long-run average. Inclusion of interest in the market basket could lead to volatility in updates, overcompensation of hospitals in some circumstances, and undue risk for facilities at other times. However, changes in interest rates can create significant financial burdens or substantial financial windfalls for hospitals. Extended periods of unusually high rates could force hospitals to choose between postponing needed renovation projects or incurring indebtedness beyond what Medicare could support.

Long-term interest rates do not appear to be in an extended period of unusually high or low levels. The interest rate on 30-year Treasury bonds was about 1 percentage point lower in the 1996 to 1997 period than in the 1991 to 1995 period, and only about half of a percentage point lower than in the entire 1977 to 1997 period. The Commission therefore believes it is not appropriate to adjust capital payments for changes in interest rates at this time. If interest rates continue at low and declining levels, a negative adjustment to the update may be warranted in the future. In that event, the Commission will study alternative methods for estimating the impact of interest rate change on hospital costs and for incorporating an adjustment for such change in the update framework.

Other Factors

MedPAC's capital update framework includes components to reflect the effects of scientific and technological advances, productivity, product change, and case-mix change on hospital costs. Because these factors overlap substantially in their effect on operating and capital costs, the same values are applied to represent them in developing the Commission's operating and capital update recommendations.

Update Framework for PPS-Excluded Hospitals and Units

The Commission's update framework for PPS-excluded hospitals and distinct-part units resembles the one for PPS hospitals in that it makes adjustments for hospital input price inflation and for scientific and technological advances. Because of differences between the two payment systems, though, the framework for excluded facilities does not include adjustments for productivity, product change, or case mix (see Volume I, Chapter 7).

The market basket for PPS-excluded hospitals and units reflects spending shares for those providers. The biggest differences are in the weights for wages and benefits, which are slightly higher than in the PPS hospital market basket, and the weights for pharmaceuticals and all other labor-intensive services, which are slightly lower. The price proxies used to forecast price changes in each component are the same, however.

Like the update framework for PPS operating rates, the framework for PPS-excluded facilities includes an adjustment to account for a hospital market basket that has higher internal hospital wage and benefit shares than the one used by HCFA. There is also an adjustment to correct for market basket forecast errors.

The final component in the framework is the adjustment for scientific and technological advances. That adjustment considers how new technologies increase costs for PPS-excluded hospitals and units. To estimate the cost impact of technology changes for excluded providers, MedPAC uses an approach similar to the one for its operating payment update. Because of the types of cases treated in these facilities, however, technology advances generally have a negligible effect on costs.

Chapter Appendix: Data and Methodolgy for Measuring Productivity Growth and Product Change

The model of hospital resource use that provided the basis for the Commission's productivity and product change adjustments is represented by the formula shown in Table II-4-9. The annual changes in each of the four terms in the model from 1986 through 1995 are also shown. This summary of data and methodology begins by documenting the sample and data source used in quantifying the model, and that is followed by definition of the time periods involved. The final sections explain the approach used in developing each of the primary variables (inputs, discharges, patient days, and services).

Sample and Data Source

All four of the terms in the equation are based on the same sample of hospitals and use data from HCFA's Medicare Cost Report file. A two-year cohort was identified for each measurement of annual change. Each cohort included all hospitals eligible for payment under PPS for which the required data (passing MedPAC edit checks) were available in both years.

Table II-4-9

Annual Change in Real Resource Use, Length of Stay, and Service Intensity, 1986-1995

	Real Resource Use Per Standard Unit of Output		Length of Stay		Service Intensity		Real Resource Use Per Unit of Services
	Change in: Inputs	=	Change in: Days	÷	Change in: Services	+	Change in: Inputs
Years	Discharges		Discharges		Days		Services
1986	2.7%		1.4%		2.9%		-1.6%
1987	1.5		1.1		2.0		-1.5
1988	1.3		0.1		2.1		-0.8
1989	3.0		0.5		1.5		1.2
1990	2.0		-0.8		0.8		2.2
1991	3.2		-1.5		2.6		2.3
1992	0.9		-1.7		1.1		1.6
1993	-0.5		-3.3		1.5		1.4
1994	-3.8		-4.0		0.7		-0.5
1995	-2.4		-4.0		1.1		0.5

SOURCE: Medicare Payment Advisory Commission analysis of Medicare Cost Report and market basket data from the Health Care Financing Administration, and case-mix data from the National Discharge Abstract Survey.

PPS Years

The study is based on "PPS years," a convention HCFA introduced when PPS was implemented in 1984. Each year includes cost reports filed for hospital fiscal years beginning at any time during a particular federal fiscal year. This means that a PPS year will, in effect, bridge two federal fiscal years. Previous analysis has shown that the discharges represented in PPS year data are about equally split between the two applicable federal years. For example, the 1995 PPS year includes data for hospital fiscal years beginning as early as October 1994 and ending as late as September 1996. The price index data referenced below had to be recalculated to match HCFA's data organized according to these PPS years.

Inputs

Inputs are items used in producing patient care (staff time, food, supplies, equipment, and so forth). These items are valued at their real cost to the hospital, that is, their actual cost adjusted for price inflation. The cost measure is total inpatient costs, including patients treated in acute and other inpatient units of the hospital (e.g., skilled nursing, transitional care) and those covered by any payment source. Direct graduate medical education expenses were excluded because they are devoted primarily to producing education rather than to patient care. This is a new measure developed recently by MedPAC staff to avoid the need to rely on a measure that reflects outpatient as well as inpatient costs.

The price adjustment is based on HCFA's market basket index, which measures inflation for the inputs hospitals use in producing inpatient services through a series of price proxies. The version of the market basket used in PPS payment policy reflects a combination of wage increases for hospital workers and workers in other industries. For purposes of this study, MedPAC staff modified the market basket to reflect hospital wages exclusively.

Discharges

This is a count of all discharges from PPS hospitals' acute care and other inpatient care units, adjusted for real changes in case mix. The case-mix adjustment is based on all payers' data from a sample of about 400 hospitals from the National Hospital Discharge Survey. The survey aggregates acute care discharges by DRG, and then Medicare's DRG weights (which are recalibrated annually) were applied to create yearly case-mix index values.

The last step was to estimate the portion of the annual case-mix index change that was "real," that is, reflecting changes in patient resource requirements rather than improvement in DRG coding or medical records documentation. This determination drew on past ProPAC estimates of the proportion of Medicare case-mix index change that is real, which were informed by a RAND recoding study funded by HCFA and ProPAC. Generally, ProPAC's work found that the proportionate effect of improved coding and medical records documentation has been (1) most pronounced following changes in the structure of DRGs, and (2) declining over time. The current analysis found that real case-mix change for all patients has followed a more stable path than that for Medicare patients alone.

Patient Days

Like the discharge measure, this variable reflects all patients in the acute care and other inpatient care units of PPS hospitals, adjusted for real case-mix change.

Services

The services measure reflects all units of service for which a charge is applied. This includes days of room and board and nursing care, as well as various ancillary services (surgery, X-rays, physical therapy procedures, and so forth). MedPAC's measure is calculated as total charges adjusted for inflation in service prices. The increase in a hospital's total charges from one year to the next will generally reflect three types of changes: (1) providing a greater number of services; (2) substituting more costly services (for instance, an MRI exam in place of a traditional X-ray); and (3) raising service prices. Once the effect of price increases has been removed, the measure will reflect change in the other two factors, which together determine the hospital's total volume of services.

The Hospitals and Related Institutions component of the CPI, which is published by the Bureau of Labor Statistics, was used for the price adjustment. The hospital CPI is based on a sample of service units in about 350 hospitals, with the data taken from each hospital's price master. While BLS's decision to base the hospital CPI on charges is well suited for the purposes of this study, a charge-based index does a poor job of measuring inflation in the cost of hospital care. A new method has been implemented effective January 1, 1997, and BLS staff have agreed to discuss the possibility of maintaining the old series to support MedPAC's work.

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Chapter 5

Disproportionate Share Hospital Payment Policies

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Disproportionate Share Hospital Payment Policies

Since 1986, Medicare has made disproportionate share (DSH) payments to hospitals covered by Medicare's inpatient prospective payment system (PPS) that serve a large share of low-income patients. In response to concerns about the accuracy of the underlying measure of care to the poor and policies for distributing the payments, the Medicare Payment Advisory Commission (MedPAC) has made three recommendations for restructuring the DSH adjustment. These recommendations are presented in Chapter 6 of the first volume of this report, along with a detailed description of the DSH payment system and a discussion of the impetus for changing current policy. This chapter presents an analysis of the payment changes that would result from several alternative distribution formulas, which the Commission considered in its decision making. The chapter begins with an overview of the Commission's recommendations. An appendix is included to document the data and methodology used in the impact analysis.

Summary of MedPAC Recommendations

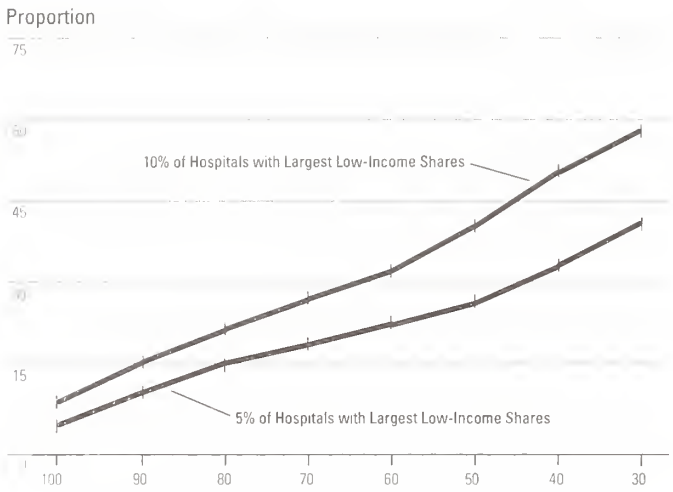
The Commission's first recommendation, addressing the basic structure of the DSH adjustment, is that DSH payments should be distributed according to each hospital's share of low-income patient costs and its volume of Medicare cases. A broad measure of care to the poor should be used in calculating low-income shares, reflecting services provided in both inpatient and outpatient settings. This measure should encompass four groups of low-income patients: (1) Medicare patients eligible for Supplemental Security Income (SSI), (2) Medicaid patients, (3) patients sponsored by other state and local indigent care programs, (4) and uninsured and underinsured patients as represented by uncompensated care (including both charity care and bad debts).

The second recommendation lays out several principles to govern how DSH payments should be targeted to specific hospitals. Through the use of a minimum threshold for low-income share, DSH payments should be concentrated among hospitals with the highest shares of poor patients. A reasonable range for the threshold would be levels that make between 50 percent and 60 percent of PPS hospitals eligible for a DSH payment. Finally, the size of the payment adjustment should increase gradually from zero at the threshold point, and the same distribution formula should apply to all PPS hospitals.

The third recommendation is that the Secretary should collect from PPS hospitals the data necessary to implement a revised DSH payment mechanism. This would consist primarily of low-income patient costs, broken down by the four categories of poor patients listed above.

Figure II-5-1

Proportion of Payments Going to Hospitals With the Largest Low-Income Shares Under Recommended DSH Payment Changes, by Threshold Level



SOURCE: Medicare Payment Advisory Commission analysis of data from Medicare Cost Reports and the American Hospital Association Annual Survey of Hospitals, 1995

NOTE: Threshold refers to the minium low-income cost share needed to quality for a DSH payment. For example, the threshold that would make 50 percent of PPS hospitals eligible would be 19.1 percent low-income share

Impact of a DSH Payment System Based on MedPAC's Recommendations

MedPAC's simulation model for Medicare DSH payments reflects three basic components of the Commission's set of recommendations: (1) the broad-based measure of care to the poor, (2) no payment notch as low-income share crosses the threshold, and (3) the same payment formula for all PPS hospitals. The model also assumes that the same amount of DSH funding will be available, so that the analysis examines only the distribution of payments.

Using this basic model, the first step was to simulate the effects of using a wide range of possible low-income share thresholds. That helped the Commission to define the narrower range of thresholds it finally recommended and should be useful to policy makers in deciding on a specific threshold point. The results of this analysis are presented in the first subsection below. Then the distribution of payments under MedPAC's proposed system, by low-income share size and by type of hospital, was compared with the distribution under current policy, using the range of thresholds most likely to be adopted. These results are shown in the second subsection.

Impact of the MedPAC Proposal by Threshold Level

A useful way to evaluate alternative threshold levels is to first establish what proportion of hospitals should be eligible for a DSH payment. Then the corresponding low-income share can be determined. If half of all PPS hospitals were to receive an adjustment, for example, the threshold would be set at the 50th percentile of low-income share values. This approach was used to simulate formulas ranging from one where eligibility is restricted to 30 percent of hospitals to one where all hospitals are eligible (that is, there is no threshold).

The threshold used substantially affects the proportion of payments received by the hospitals at the upper end of the scale of low-income shares (see Figure II-5-1). With no threshold, only about 13 percent of the payments would go to the tenth of hospitals with the largest low-income shares. This proportion increases steadily as the threshold rises, until 58 percent of payments go to the top tenth when the threshold limits eligibility to 30 percent of hospitals. The range is even wider for the proportion going to the top 5 percent of hospitals by low-income share—from 8 percent when there is no threshold to 43 percent with the highest threshold tested.

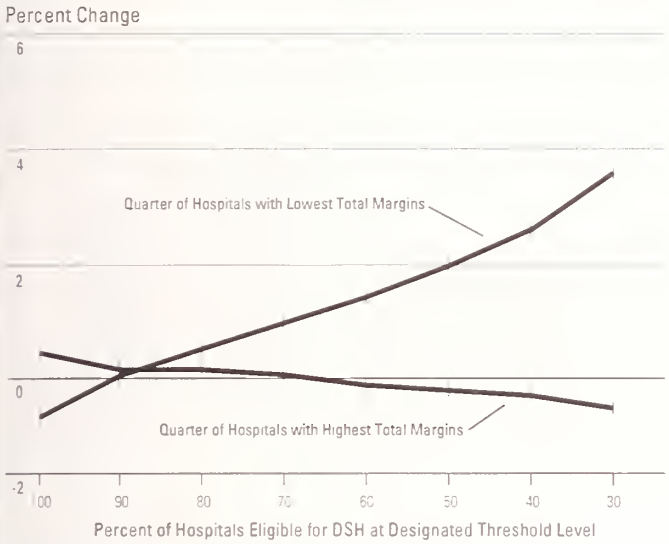
One consideration in deciding how high the threshold should be set is the degree to which the resulting reallocation of DSH payments narrows differences in total margins. Implementing a system based on MedPAC's recommendations without a threshold would actually harm the quartile of hospitals with the lowest total margins and help the quartile that already enjoy the highest margins (see Figure II-5-2). Adding a threshold helps those in most need of assistance, and the higher the threshold used, the greater the financial boost. When payments are restricted to 30 percent of hospitals, the quartile of hospitals in the worst financial condition would see their total margins rise by 3.8 percentage points, with small declines across the other three quartiles.

This does not necessarily mean that the most restrictive threshold is best, however. For one thing, when payments are restricted to 40 percent of PPS hospitals, the margins of the urban hospitals gaining the most from the MedPAC system would reach the average for all urban hospitals.[1] In addition, the rural hospitals gaining the most at this threshold would see their total margins surpass both the rural and urban averages. This suggests that a threshold restricting participation to less than 40 percent of all hospitals would not be advisable.

Another consideration is that a large proportion of the hospitals with the largest low-income shares are operated by state or local governments. These public institutions are seen by many observers as forming the backbone of the nation's safety net, and they clearly should remain a primary target of Medicare DSH payment policy.

Figure II-5-2

Change in Total PPS Payments Due to Recommended DSH Payment Changes for Hospitals With High and Low Total Margins, by Threshold Level

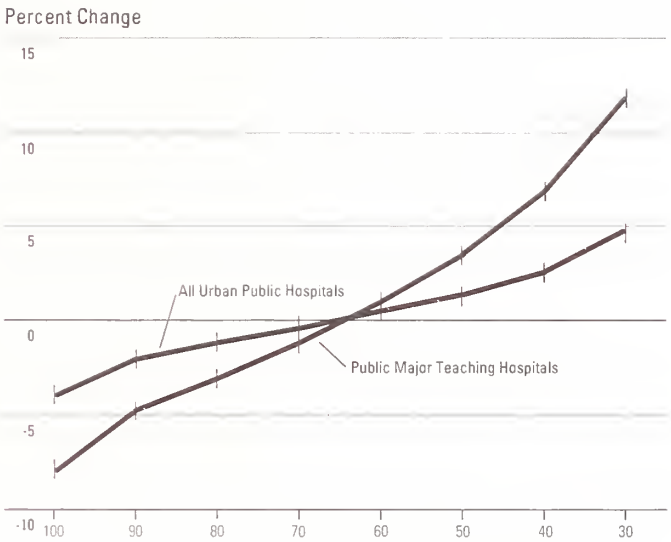


SOURCE: Medicare Payment Advisory Commission analysis of data from Medicare Cost Reports and the American Hospital Association Annual Survey of Hospitals, 1995.

NOTE: Threshold refers to the minium low-income cost share needed to quality for a DSH payment. For example, the threshold that would make 50 percent of PPS hospitals eligible would be 19.1 percent low-income share.

Figure II-5-3

Change in Total PPS Payments Due to Recommended DSH Payment Changes for Public Hospitals, by Threshold Level



SOURCE: Medicare Payment Advisory Commission analysis of data from Medicare Cost Reports and the American Hospital Association Annual Survey of Hospitals, 1995.

NOTE: Threshold refers to the minium low-income cost share needed to quality for a DSH payment. For example, the threshold that would make 50 percent of PPS hospitals eligible would be 19.1 percent low-income share.

But at the same time, increasing the allocation of DSH monies to public hospitals might be seen as supplanting the need for local subsidies aimed at offsetting their uncompensated care costs, at the expense of nonprofit institutions that do not have access to public funds.

The simulation results show that any threshold restricting DSH participation to 80 percent or less would help public hospitals, while raising it to the highest level tested would increase their PPS payments by almost 6 percent (see Figure II-5-3). Public major teaching hospitals—the large, generally inner-city institutions playing the most critical safety net role—are even more sensitive to the threshold level used. Although these hospitals are already helped substantially by the current DSH payment system, their total PPS payments would rise by almost 12 percent under MedPAC's proposal combined with a threshold restricting DSH eligibility to only 30 percent of hospitals. The higher the threshold, the more DSH money is steered away from voluntary to public institutions. Because of the potential for substitution of federal for local funding, how far to tilt the system in this direction is not a question that can be answered based only on the effect on hospital margins.

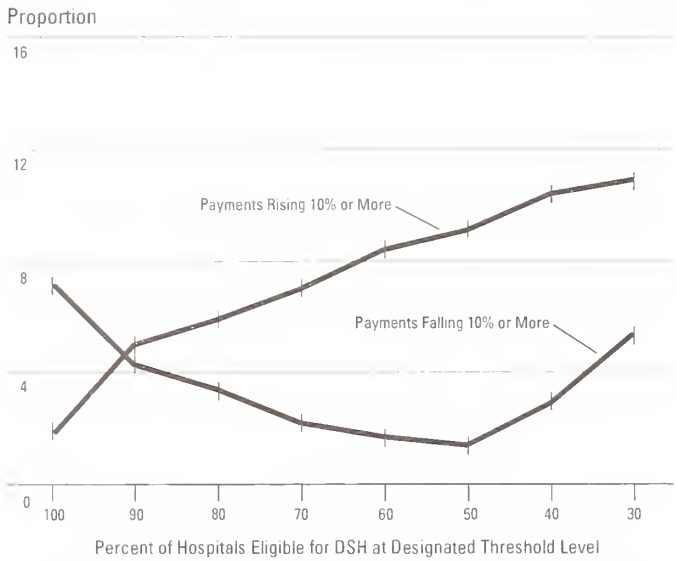
One other important consideration in determining the appropriate threshold level is the degree of financial dislocation that would be caused by implementing the new DSH payment system. Among urban hospitals, the percentage of hospitals that would receive at least a 10 percent increase in PPS revenues from the change climbs steadily as the threshold level is raised, reaching as high as 11 percent (see Figure II-5-4). But the proportion that would suffer a 10 percent or more decrease in PPS payments is minimized in the middle of the threshold continuum. When the threshold making 50 percent of hospitals eligible is used, only 1.4 percent of urban hospitals would fare this poorly and there would be a similar outcome—1.7 percent—at the threshold that restricts participation to 60 percent.[2]

The hospitals gaining the most from the MedPAC proposal are defined as those whose total PPS payments would be raised by at least 5 percent. At the threshold being discussed, this would include about 12 percent of the PPS hospitals located in urban areas. It must be remembered that this margin simulation assumes that hospital costs would be unaffected by any change in PPS payments, which is not necessarily the case.

[2] Among rural hospitals, the proportion that would lose at least 10 percent of their total PPS payments under MedPAC's proposal is much smaller—as low as 0.2 percent—and also less sensitive to the threshold used.

Figure II-5-4

Proportion of Urban Hospitals With Large Changes in Total PPS Payments Due to Recommended DSH Payment Changes, by Threshold Level

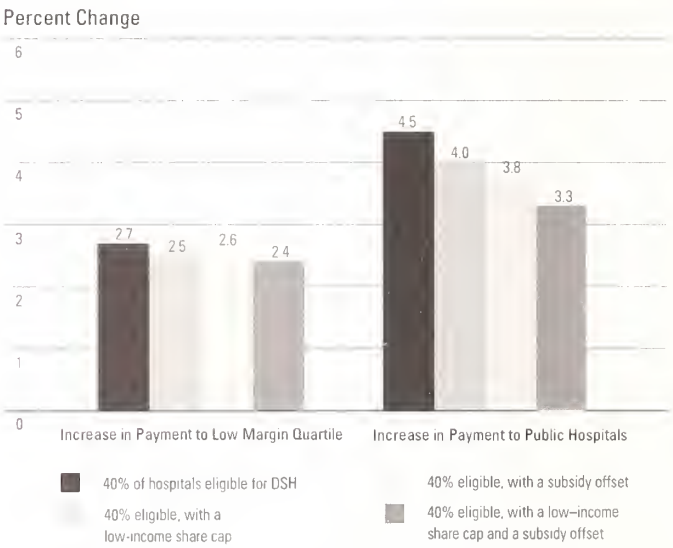


SOURCE: Medicare Payment Advisory Commission analysis of data from Medicare Cost Reports and the American Hospital Association Annual Survey of Hospitals, 1995.

NOTE: Threshold refers to the minium low-income cost share needed to quality for a DSH payment. For example, the threshold that would make 50 percent of PPS hospitals eligible would be 19.1 percent low-income share

Figure II-5-5

Change in Total PPS Payments Due to DSH Payment Changes Including a Low-Income Share Cap and Subsidy Offset, for Public and Low-Margin Hospitals



SOURCE: Medicare Payment Advisory Commission analysis of data from Medicare Cost Reports and the American Hospital Association Annual Survey of Hospitals, 1995.

NOTE: Assumes a threshold for low-income share that makes 40 percent of PPS hospitals eligible to receive a DSH payment. To this basic option is added a cap on low-income share of 60 percent, an offset of revenue from local government operating subsidies of 50 percent, or both.

This result, coupled with the indicators presented above, suggests that the threshold in Medicare's future DSH payment system should allow somewhere between 40 percent and 60 percent of PPS hospitals to receive a DSH payment. Selecting the restrictive end of this range—making 40 percent eligible—would maximize the assistance given the hospitals with the largest low-income shares, many of which are government operated. Choosing the less restrictive end—making 60 percent eligible—would provide more help to the mostly voluntary hospitals with mid-level shares of care to the poor, while minimizing the large payment changes resulting from the transition.

The Commission's preference is toward the lower end of this range—a threshold that would allow between 50 percent and 60 percent of PPS hospitals to receive a payment. This could be somewhat more than the roughly 50 percent that currently receive a payment in urban areas, but today any hospital eligible for DSH receives at least a 2.5 percent payment add-on. With some hospitals receiving a smaller add-on under MedPAC's approach, more hospitals would have to be eligible in order for a similar proportion of payments to go to those with the largest low-income shares.

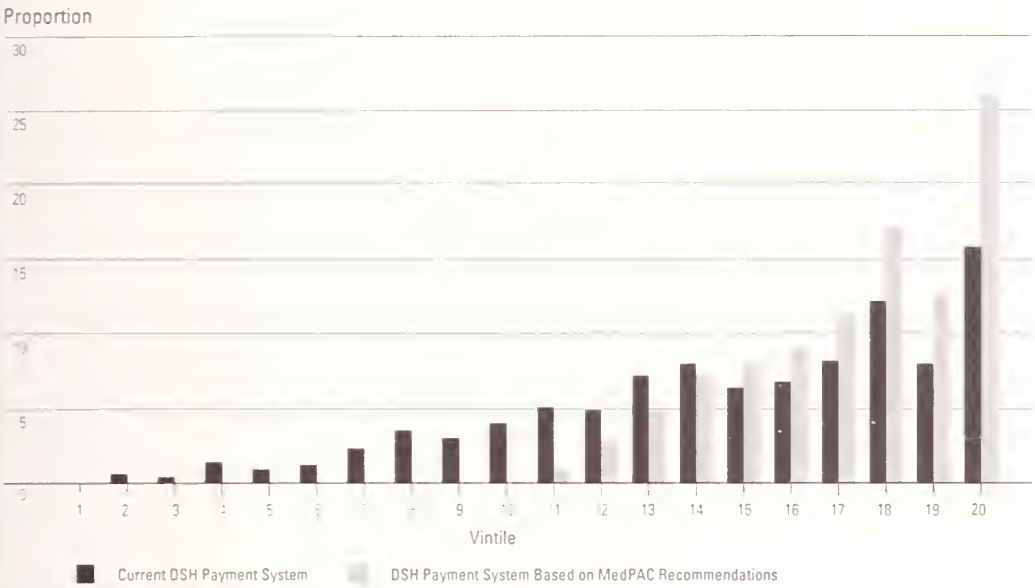
MedPAC tested two other design options that might be used in limiting the share of DSH payments going to the hospitals with the largest low-income shares, a substantial proportion of which are public:

- offsetting the uncompensated care costs included in the low-income share by some portion of any tax appropriated subsidies the hospital receives (a 50 percent offset was tested); and
- placing a cap on individual hospital low-income patient shares (a 60 percent cap was tested).

As anticipated, both options reduce the proportion of payments going to hospitals at the upper end of the range of low-income shares and to public hospitals (see Figure II-5-5). Moreover, the two options together produce a larger effect than either alone. However, reducing the threshold level (moving toward the point of 60 percent DSH eligibility) has a similar effect without adding complexity to the system, and so that would appear to be the preferred method.

Figure II-5-6

Proportion of DSH Payments Under Current DSH Payment System and With Recommended Changes, by Vintile



SOURCE: Medicare Payment Advisory Commission analysis of data from Medicare Cost Reports and the American Hospital Association Annual Survey of Hospitals 1995.

NOTE: Assumes a threshold, or minimum value for low-income share that makes 50 percent of PPS hospitals eligible to recieve a DSH payment. Vintiles are 20 equal-sized groups of hospitals ranked by low-income cost share. The 20th vintile includes the hospitals with the largest low-income shares, the 1st vintile includes those with the smallest shares.

Overall Distribution of Payments Under the MedPAC Proposal

Even under the threshold with the fewest hospitals suffering large payment declines (the 50 percent participation option), the distribution of DSH payments under MedPAC's recommendations still differs markedly from that under the current system. This can be seen by calculating the proportion of DSH payments going to each of 20 groups ranked by average low-income cost share, each containing 5 percent of all PPS hospitals. The group devoting the largest shares of their operating costs to treating the poor would receive 26 percent of all DSH payments under MedPAC's proposal, compared with 16 percent under the current system (see Figure II-5-6). The half of hospitals with the smallest low-income shares, which by design would receive no payments under the MedPAC proposal, receive 17 percent of the DSH monies today. The greater concentration of payments at the high end of the scale under MedPAC's approach reflects the effects of using the broader measure of low-income patient costs as well as applying the same qualification standard to all hospitals.

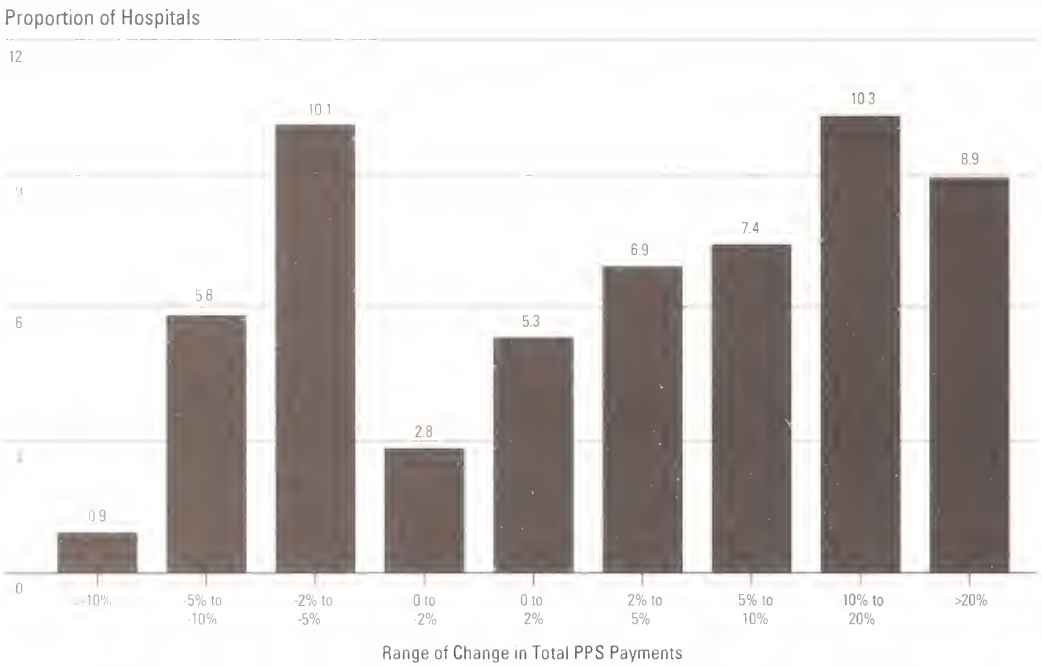
With 50 percent eligibility, almost twice as many hospitals would see an increase in their DSH payments as would suffer a decline—39 percent of all PPS hospitals compared with 20 percent (see Figure II-5-7). This is not because the declines are proportionately larger than the increases; in fact, PPS payments for almost one-fifth of the hospitals would rise by at least 10 percent, while they would fall this much for less than 1 percent. The reason the reductions add up to enough to fund the greater number of gains is that adversely affected hospitals are larger and also have current DSH payments that constitute a greater proportion of their total revenue.

Characteristics of the Hospitals Gaining and Losing the Most

As mentioned previously, the hospitals that MedPAC's recommendations would help the most have below-average total margins. This appears to be attributable primarily to an unfavorable mix of patients. Hospitals whose total PPS payments would rise significantly (by 10 percent or more) under the Commission's approach treat proportionately more of the three largest categories of low-income patients than those whose payments would fall substantially (see Figure II-5-8). The large gainers devote 14 percent of their resources to uncompensated care, compared with only 3 percent for the large losers. The gainers have a 7 percent share of patients in a residual category that is dominated by local indigent care programs, compared with only 2 percent for the significant losers. Those that would be helped the most even have larger Medicaid cost shares (37 percent compared with 12 percent), despite the fact that Medicaid is heavily weighted in the current low-income share measure.

Figure II-5-7

Distribution of Changes in Total PPS Payments Due to Recommended DSH Payment Changes



SOURCE: Medicare Payment Advisory Commission analysis of data from Medicare Cost Reports and the American Hospital Association Annual Survey of Hospitals, 1995.

NOTE: Assumes a threshold for low-income share that makes 50 percent of PPS hospitals eligible to receive a DSH payment. About 42 percent of hospitals would receive no DSH payment under either the current system or the recommended payment changes.

The hospitals whose total PPS payments would decline significantly under MedPAC's proposal have larger shares of the remaining categories of patients—those covered by Medicare and private payers. Their average cost share for Medicare is 44 percent, compared with 27 percent for the hospitals getting large payment increases. Most likely, this means that their current DSH allocation rests heavily on Medicare patients who are eligible for SSI. The larger share of privately insured patients (39 percent compared with 14 percent) provides greater opportunity for generating above-cost revenue to cover losses from treating the poor.

Hospitals located in southern and southwestern states are more likely to be among those that would benefit from the MedPAC proposal. Nine of the 10 states with the largest average increases in total PPS payments resulting from adoption of the Commission's recommendations are in these regions. These states have in common limited Medicaid eligibility policies and above-average hospital uncompensated care burdens.

Range of Effects by Hospital Group

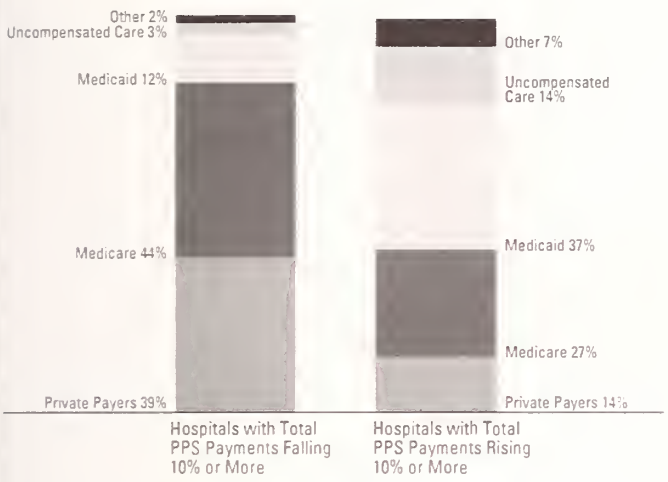
On average under MedPAC's approach, total PPS payments would decline by just under 1 percent in urban hospitals and increase by 5 percent in rural hospitals (see Figure II-5-9). The reduction would be slightly smaller in metropolitan statistical areas with more than one million population than in other urban areas. Among rural hospitals, the percentage increase would be smaller for facilities receiving special Medicare payments as sole community hospitals or rural referral centers, because these facilities receive higher DSH payments under the current system. Other rural hospitals, which make up more than half of the total, would see their payments climb by about 7 percent.

The shift in DSH funding from urban to rural hospitals is reduced as the threshold is lowered, but the difference is modest. Among rural facilities without special payment status, for example, the increase in total PPS payments would fall from 7.1 percent to 6.7 percent when a lower threshold is used to broaden eligibility from 40 percent to 60 percent of PPS hospitals. Among sole community hospitals, there is no difference in impact within this range. The limited sensitivity to threshold level results primarily from the fact that there is a fairly wide range of commitments to caring for the poor in both urban and rural areas.

As indicated earlier, MedPAC's recommendations would raise total PPS payments for public hospitals, but the degree of change is quite sensitive to the threshold used. The change would be most dramatic for public hospitals in rural areas, ranging from a 6.7 percent payment increase if 60 percent of hospitals are eligible for DSH to a 7.5 percent rise if 40 percent are eligible (see

Figure II-5-8

Proportion of Hospital Costs, by Payer, for Urban Hospitals With Large Changes in Total PPS Payments Due to Recommended DSH Payment Changes



SOURCE: Medicare Payment Advisory Commission analysis of data from Medicare Cost Reports and the American Hospital Association Annual Survey of Hospitals, 1995.

NOTE: The recommened DSH payment changes assume a threshold for low-income share that makes 50 percent of PPS hospitals eligible to receive a DSH payment. The "other" category includes government payers (such as CHAMPUS, workers compensation, and local indigent care programs) and non-operating activities (such as gift shops and parking lots)

Figure II-5-10. Urban public hospitals would see their payments climb from 0.6 percent to 3.2 percent within this threshold range. Proprietary hospitals would get a small payment increase, while voluntary institutions, on average, would experience a small decline.[3]

MedPAC's proposal would produce a small shift in DSH funds from teaching to non-teaching hospitals, although the size of the change differs for public and private teaching institutions (see Figure II-5-11). The payment increases for public teaching hospitals would vary significantly by threshold level, as discussed earlier. The declines for the much larger number of private teaching facilities, on the other hand, would be just over 1 percent and would vary by threshold only within a narrow range.

Chapter Appendix: Data and Methodology for Measuring the Impact of DSH Payment Changes

MedPAC's simulation of the distribution of Medicare DSH payments used hospital cost data from the 1995 American Hospital Association (AHA) Annual Survey of Hospitals and 1995 PPS payments data from the Health Care Financing Administration (HCFA). The sample consisted of 3,345 hospitals, representing about two-thirds of those eligible for payment under Medicare's inpatient PPS. The remaining hospitals were lost to the analysis because they did not submit an annual survey to the AHA, could not be matched between the AHA and HCFA data files, or did not pass edit checks that were applied. The first section of this appendix explains how each hospital's low-income share was calculated, and the second documents the formulas used in the simulation.

Calculating Low-Income Shares

A low-income patient share for each hospital was calculated from the AHA Annual Survey data by dividing the estimated costs of treating low-income patients by the costs of treating all patients. With one exception (discussed below), costs were calculated by applying a hospital-specific ratio of costs to charges (RCC) to the associated charges.

For Medicare SSI patients, charges were first aggregated for all inpatient and outpatient services covered by Medicare. The Commission recommended that this include PPS inpatient services and all Medicare outpatient services (clinic, emergency room, surgical, and other ancillary care), but the available AHA data also include hospital-based home health and nursing facility services. This charge total was then multiplied by the hospital's ratio of Medicare SSI patient days to total Medicare days to arrive at an estimate of low-income Medicare charges. The hospital-specific SSI ratios were those used in the current DSH payment system.

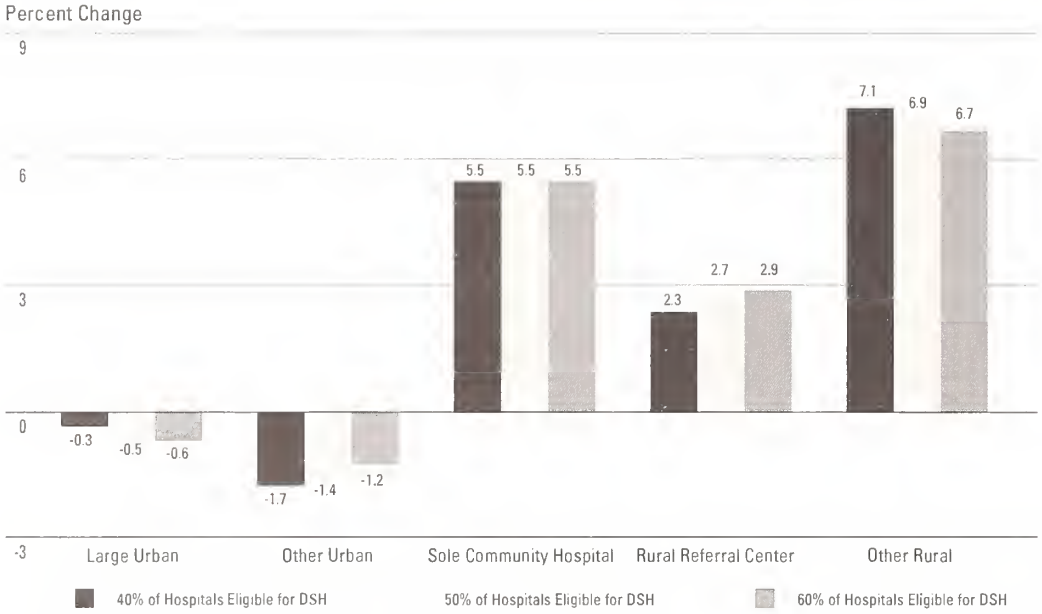
Medicaid charges were similarly aggregated. Charges for patients covered by a local indigent care program other than Medicaid are not reported on the Annual Survey, but there is a category labeled "other government payers" that includes these programs. In MedPAC's simulations, losses (payments minus costs) from other government payers is used as a proxy for local indigent care program costs. This is based on the premise that local indigent care programs usually make payments that fall considerably short of covering associated costs, while other public payers (workers' compensation programs, CHAMPUS, and so forth) typically pay amounts that are at or above costs. The approach likely does differentiate hospitals that treat significant numbers of patients covered by local indigent care programs, even though it may understate the costs involved. If MedPAC's recommendations were implemented, this component of care to the poor would be measured explicitly, obviating the need for this type of proxy.

The sum of charity care and bad debt charges reported by each hospital was used to represent uncompensated care. Ideally, unpaid charges emanating from patients covered by Medicaid or other indigent care programs would not be included in uncompensated care, to avoid double counting in the calculation of low-income shares. However, it appears that some hospitals may have included

[3] Proprietary hospitals have the lowest proportion of hospitals reporting complete data to the American Hospital Association of any of the groups analyzed. Consequently, a larger margin of error must be assumed for the proprietary hospital values.

Figure II-5-9

Change in the Total PPS Payments Due to Recommended DSH Payment Changes, by Threshold Level and Hospital Location



SOURCE: Medicare Payment Advisory Commission analysis of data from Medicare Cost Reports and the American Hospital Association Annual Survey of Hospitals, 1995.

NOTE: Threshold refers to the minimum low-income cost share needed to qualify for a DSH payment. For example, the threshold that makes 50 percent of PPS hospitals eligible would be 19.1 percent low-income share.

such amounts in the uncompensated care charges they reported to the AHA, resulting in their low-income shares being overstated for the simulation. Double counting would occur if charges from days beyond a Medicaid length of stay limit were considered charity care, or if losses were counted as charity for low-paying indigent care programs. This problem could be avoided in collecting the data for implementing MedPAC's recommended approach.

Formula for the Simulation Model

The formula used for the simulation determines the percentage add-on to base PPS payments. Base payments are basic DRG payments plus outlier payments; they do not include indirect teaching or graduate medical education payments. In generic terms, this formula is:

$$DSH\% = (LIS - T) \times CF$$

where

LIS = low-income share

T = threshold, or minimum low-income share value

CF = conversion factor

The quantified formula is shown opposite for the three threshold levels used most extensively in the analysis.

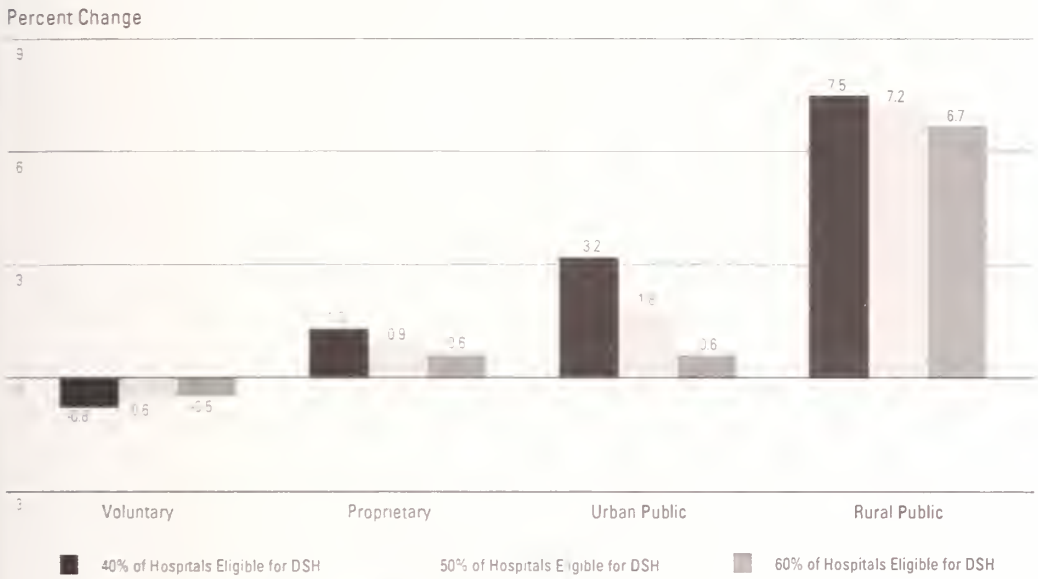
Percentage of PPS Hospitals Eligible for DSH	Distribution Formula for DSH Payments
40 percent	DSH% = (LIS − .221) × 1.780
50 percent	DSH% = (LIS − .191) × 1.327
60 percent	DSH% = (LIS − .166) × 1.039

A conversion factor is included in the formula to make total DSH payments in the simulation equal the total payments actually made in 1995. It defines the percentage add-on to the per case payment rate that will be made for every percentage point of low-income share above the designated threshold level. As the threshold is liberalized (for example, set at a level that makes 60 percent rather than 50 percent of hospitals eligible for DSH), the conversion factor must be reduced to maintain budget neutrality.

The conversion factors shown are unique to the particular level of DSH funding and also to the specific threshold level used. Moreover, the factors are linked specifically to low-income cost shares calculated by applying the method documented above to data from the 1995 AHA Annual Survey, and to calendar year 1995 PPS payments data.

Figure II-5-10

Change in Total PPS Payment Due to Recommended DSH Payment Changes, by Threshold Level and Type of Control



SOURCE: Medicare Payment Advisory Commission analysis of data from Medicare Cost Reports and the American Hospital Association Annual Survey of Hospitals, 1995.

NOTE: Threshold refers to the minimum low-income cost share needed to qualify for a DSH payment. For example, the threshold that makes 50 percent of PPS hospitals eligible would be 19.1 percent low-income share.

Figure II-5-11

Change in Total PPS Payments Due to Recommended DSH Payment Changes, by Threshold Level and Hospital Teaching Status

SOURCE: Medicare Payment Advisory Commission analysis of data from Medicare Cost Reports and the American Hospital Association Annual Survey of Hospitals, 1995.

NOTE: Threshold refers to the minimum low-income cost share needed to qualify for a DSH payment. For example, the threshold that makes 50 percent of PPS hospitals eligible would be 19.1 percent low-income share.

Chapter 6

Providers Excluded from the Acute Care Prospective Payment System: Trends and Payment Policy

Chapter 6

Providers Excluded from the Acute Care Prospective Payment System: Trends and Payment Policy

Five types of specialty hospitals (rehabilitation, psychiatric, long-term care, children's, and cancer) and two types of distinct-part units in acute care hospitals (rehabilitation and psychiatric) are excluded from Medicare's acute care hospital prospective payment system (PPS). Payments to these providers are based on their Medicare-allowable costs per discharge, subject to limits established in the Tax Equity and Fiscal Responsibility Act of 1982 (TEFRA).

TEFRA marked the first major change in Medicare hospital payment policy. Before fiscal year 1983, all hospitals were reimbursed their full allowable costs for furnishing services to Medicare patients. The payment system under TEFRA was intended as a temporary measure to control rising Medicare inpatient expenditures until a prospective system could be established.

When PPS was implemented in fiscal year 1984, however, it was not applied to all hospitals for two main reasons. First, and most importantly, the patient classification system used in PPS, diagnosis-related groups (DRG), was thought to be a poor predictor of resource use among patients in specialty hospitals and units. Second, PPS was considered inappropriate for children's hospitals, in particular, because they have so few Medicare patients. It was thought that PPS payments, which are derived from average costs per Medicare discharge in each DRG, would diverge markedly from actual costs in facilities with low Medicare volume. Given these concerns, specialty facilities remained under TEFRA payment rules.

The decision to exclude these providers was made easier by the fact that they accounted for a small share of Medicare's hospital discharges and payments. In 1983, discharges from these facilities were 2.4 percent of total Medicare hospital discharges, and expenditures equaled 3.5 percent of inpatient expenditures. The importance of these facilities to the program has grown, however, as spending and volume have increased. By 1995, specialty facility discharges were 7.1 percent of all Medicare hospital discharges, and expenditures reached 9.8 percent of the total.

As a companion to recommendations of the Medicare Payment Advisory Commission (MedPAC) in Volume I, Chapter 7, this chapter provides background on PPS-excluded facilities, details the payment policies under TEFRA, and discusses possible effects of payment changes enacted under the Balanced Budget Act of 1997 (BBA).

PPS-Excluded Facilities

To be excluded from PPS, facilities in each specialty class must meet various criteria related to, for example, patient diagnosis and staffing qualifications. The number of excluded facilities has grown 4.4 percent annually during the 1990s, to nearly 3,500 in 1997. The number of Medicare discharges at these facilities climbed 10.8 percent a year between 1990 and 1995. As a result, inpatient payments to rose 18.5 percent annually, to $9.6 billion in 1995.

Psychiatric Facilities

To be excluded from PPS, psychiatric facilities must treat patients with a psychiatric principal diagnosis, and have a multidisciplinary team that includes a board-certified or board-eligible psychiatrist and a director of psychiatric nursing services. In addition, facilities must have procedures for ongoing patient assessment and treatment plan evaluation and provide psychological, social, and therapeutic services commensurate with patient needs.

Table II-6-1

Number of PPS-Excluded Hospitals and Units, 1990-1997

Facility	1990	1991	1992	1993	1994	1995	1996	1997	Average Annual Change
Psychiatric	1,817	1,865	1,963	2,018	2,068	2,114	2,113	2,120	2.2%
Hospitals	687	709	710	717	708	703	648	624	-1.4
Units	1,130	1,156	1,253	1,301	1,360	1,411	1,465	1,496	4.1
Rehabilitation	813	852	923	980	1,019	1,023	1,048	1,080	4.1
Hospitals	135	152	164	184	195	191	189	198	5.6
Units	678	700	759	796	824	832	859	882	3.8
Long-term care	90	91	102	115	146	168	185	200	12.1
Cancer	9	9	9	9	9	9	9	10	0
Children's	65	64	67	70	72	71	70	70	1.2

SOURCE: Medicare Payment Advisory Commission analysis of Office of Survey and Certification data.

NOTE: Data as of December of each year

With over 2,100 excluded hospitals and units in 1997, the psychiatric class is the largest of the five classes excluded from PPS and accounts for 61 percent of those facilities (see Table II-6-1). About 70 percent of psychiatric providers are distinct-part units of acute care hospitals; these treat two-thirds of Medicare's discharges from psychiatric facilities. These providers depend least on Medicare, compared with rehabilitation and long-term care facilities. In 1995, the program's beneficiaries accounted for 26.1 percent of discharges from excluded psychiatric facilities (see Table II-6-2). Aggregate payments to psychiatric facilities were 2 percent below costs in 1995, and 30.4 percent of these providers were paid less than their costs (see Table II-6-3). Their payment-to-cost ratio increased 4.5 percent during the 1990s, though, signaling improvements in aggregate financial performance. Some of this gain likely was related to changes in psychiatric patient treatment. While private-sector payers have encouraged alternatives to hospitalization of psychiatric patients and controls on service use, patterns among Medicare patients also have changed. The average length of stay (LOS) among the program's beneficiaries declined 5.9 percent annually between 1990 and 1995, to 14.7 days. During this period, inflation-adjusted costs per discharge fell 3.8 percent a year, to $6,523. At $6,420, payments per discharge were almost unchanged after accounting for inflation.

Rehabilitation Facilities

To be classified as an excluded rehabilitation facility, at least 75 percent of a provider's inpatient population must require intensive rehabilitation for one or more of 10 specified conditions related to neurological or musculoskeletal problems or burns. Its Medicare patients must have a medical need for three or more hours of therapy daily. The facility also must have precertification screening and ongoing patient evaluation procedures and a multidisciplinary staff.

Medicare patients accounted for 67.6 percent of discharges from rehabilitation facilities in 1995. In aggregate, these providers have operated profitably under TEFRA. Ratios of payments to costs grew 4.8 percent annually in the 1990s, and payments exceeded costs by 5 percent in 1995. A relatively small share of facilities, 15.1 percent, were paid less than their costs in that year. Factors contributing to this performance have included a growing number of new providers under TEFRA and declining average LOS and costs per discharge. The number of excluded rehabilitation hospitals and units increased 4 percent annually between 1990 and 1997, while the average LOS and inflation-adjusted costs per case fell almost 6 percent annually through 1995.

Table II-6-2

Selected Characteristics of PPS-Excluded Facilities, 1995

Facility Type	Total Inpatient Payments		Medicare Share of Cases		Length of Stay	
	Amount (In Billions)	Annual Change[a]	Share	Annual Change[b]	Days	Annual Change[b]
Psychiatric	$3.8	8.2%	26.1%	2.9%	14.7	-5.9%
Hospitals	1.4	5.5	20.7	2.6	16.6	-4.9
Units	2.4	9.7	30.2	2.7	13.8	-5.3
Rehabilitation	4.3	5.7	67.6	2.3	17.9	-5.5
Hospitals	1.6	5.0	65.4	3.2	21.0	-5.5
Units	2.6	6.1	68.7	1.9	16.5	-5.5
Long-term care	1.2	38.9	41.6	1.0	36.2	-0.4
Cancer	0.28	1.7	18.5	0.8	10.4	5.5
Children's	0.03	-1.9	0.6	-2.8	6.8	-2.3

SOURCE: Medicare Payment Advisory Commission analysis of Medicare Cost Report data.

[a] Average annual change in inflation-adjusted payments, 1990-1995.
[b] Average annual change, 1990-1995.

Table II-6-3

Financial Characteristics of PPS-Excluded Facilities, 1995

Facility Type	Costs Per Discharge		Payments Per Discharge		Payment-to-Cost Ratio	
	Amount	Annual Change[a]	Amount	Annual Change[a]	Ratio	Annual Change[b]
Psychiatric	$6,523	-3.8%	$6,420	0.6%	0.98	4.6%
Hospitals	6,400	-4.6	6,241	-0.7	0.98	4.1
Units	6,585	-3.3	6,511	1.4	0.99	4.8
Rehabilitation	10,044	-5.9	10,539	-1.4	1.05	4.8
Hospitals	10,206	-8.4	10,927	-1.7	1.07	7.2
Units	9,964	-4.5	10,347	-1.3	1.04	3.4
Long-term care	19,291	0.1	19,133	7.4	0.99	7.3
Cancer	17,039	8.8	11,531	1.3	0.68	-6.9
Children's	11,865	-5.1	10,473	1.4	0.88	6.9

SOURCE: Medicare Payment Advisory Commission analysis of Medicare Cost Report data.

[a] Average annual change in inflation-adjusted payments, 1990-1995.
[b] Average annual change, 1990-1995.

Long-Term Care Hospitals

A hospital may be excluded from PPS and classified as a long-term care hospital if its average LOS is longer than 25 days and it is not otherwise classified as a rehabilitation or psychiatric hospital. These hospitals are a diverse group furnishing services such as comprehensive rehabilitation, respiratory therapy, cancer and trauma treatment, and pain and wound management.

Aggregate payments to long-term care hospitals were 1 percent under costs in 1995, and 22.2 percent of facilities were paid less than their costs. The disparity in financial performance by the number of years a facility is subject to TEFRA is particularly evident among long-term care hospitals (see Table II-6-4). The disparity largely is a result of the rapid growth of new providers—the number of long-term care hospitals rose 12 percent per year

Table II-6-4

Payment-to-Cost Ratios for PPS-Excluded Facilities, by Year Subject to TEFRA, 1995

Facility Type	Year Subject to TEFRA: 1990 or earlier	Year Subject to TEFRA: After 1990
Psychiatric		
Hospitals	1.00	0.99
Units	0.98	1.02
Rehabilitation		
Hospitals	1.06	1.06
Units	1.02	1.06
Long-term care	0.91	1.06

SOURCE: Medicare Payment Advisory Commission analysis of Medicare Cost Report data.

NOTE: TEFRA = Tax Equity and Fiscal Responsibility Act.

in the 1990s, totaling 200 by 1997. Across all long-term care hospitals, Medicare inflation-adjusted payments per case rose 7.4 percent annually between 1990 and 1995, while real costs per discharge remained unchanged, at $19,291. During this period, the average stay was 36.2 days.

Medicare does not recognize long-term care distinct-part units of acute care hospitals as PPS- excluded providers. This is because PPS payments are derived from average Medicare costs, including those of long-stay patients, in acute care hospitals. If a hospital were allowed to transfer its long-stay (and expensive) patients onto long-term care distinct-part units, the hospital could inappropriately lower its average cost of patients paid under PPS.

Nonetheless, in the late 1980s and 1990s, HCFA identified several so-called long-term care hospitals-within-hospitals paid under TEFRA rules. These were located in the same building or on the campus of a host hospital and had an average LOS greater than 25 days. Concerned that these providers were in fact long-term care units of acute care hospitals, HCFA implemented additional qualifying criteria effective October 1, 1994. A long-term care facility located in or on the campus of an acute care hospital is required to have a separate governing body, chief executive officer, chief medical officer, and medical staff. In addition, it must either perform basic functions independently from the host hospital or admit at least 75 percent of its patients from sources other than the host hospital. A provision in the BBA, however, exempts all long-term care hospitals-within-hospitals that were excluded from PPS as of September 30, 1995, from the additional criteria.

Children's Hospitals

Children's hospitals are excluded from PPS if most of their inpatients are under age 18. The majority of Medicare beneficiaries in these hospitals are eligible due to end-stage renal disease. In 1995, Medicare patients accounted for less than 1 percent of patients discharged from these hospitals.[1] Medicare discharges peaked in 1989 at 2,684 and have fallen over 3 percent annually throughout the 1990s, to 2,238 in 1995.

Totaling $23.4 million in fiscal year 1995, inpatient operating payments to children's hospitals are a small fraction, 3.5 percent, of such payments to excluded facilities. Medicare inflation- adjusted costs per discharge in children's hospitals declined 5 percent per year in the 1990s, to $11,865 in 1995. At the same time, payments per case increased almost 5 percent above inflation to $10,473, and aggregate costs exceeded payments by 12 percent in 1995. Most children's facilities receive exceptions payments (discussed below) each year, however, compensating for some of their costs.

Cancer Hospitals

Cancer hospitals were not originally excluded from PPS. Instead, through regulation HCFA allowed certain cancer hospitals to receive operating payments under TEFRA rules. Other PPS policies, however, applied to these providers. Under the Omnibus Budget Reconciliation Act (OBRA) of 1989, the Congress specifically excluded certain cancer hospitals from PPS. This action extended to these hospitals two payment protections available to other PPS- excluded facilities—full reimbursement of allowable capital costs, and receipt of periodic interim payments to ensure consistent cash flows.

Cancer hospitals excluded from PPS must have been recognized by the National Cancer Institute of the National Institutes of Health as a comprehensive cancer center or clinical cancer research center as of April 20, 1983. The entire facility must be organized primarily for cancer research or treatment, and at least 50 percent of total discharges must have a principal diagnosis of neoplastic disease. Cancer hospitals not excluded from PPS on or before December 31, 1990, can be excluded from PPS only through legislative action. The BBA exempted an additional facility, bringing to 10 the number of excluded cancer hospitals.

[1] Facilities with very low Medicare patient volume are not required to submit Medicare Cost Reports.

The excluded cancer hospitals vary in size, ranging from fewer than 50 beds to more than 500. The number of Medicare discharges also varies among these facilities, though on average, the program's beneficiaries constitute 18.5 percent of discharges. Medicare costs per case to the nine excluded hospitals in fiscal year 1995 ranged from $8,041 to $22,697, while per case payments ranged from $8,152 to $27,835. Aggregate payments were 32 percent under costs; however, these hospitals typically receive substantial exceptions payments each year, offsetting this loss.

Payment Under TEFRA

TEFRA's payment method for Medicare-allowable inpatient operating costs is complex. Medicare pays each PPS-excluded facility either its average costs per discharge or its target amount, whichever is less. The target amount equals a facility's costs per discharge in its base year, updated to the current year. A hospital's base year is designated as its second full cost reporting period as an excluded hospital; a distinct-part unit's base year is its first reporting period. As detailed below, a facility with costs under its target also is rewarded with a bonus payment. If its costs per discharge exceed its target, a facility receives a relief payment.

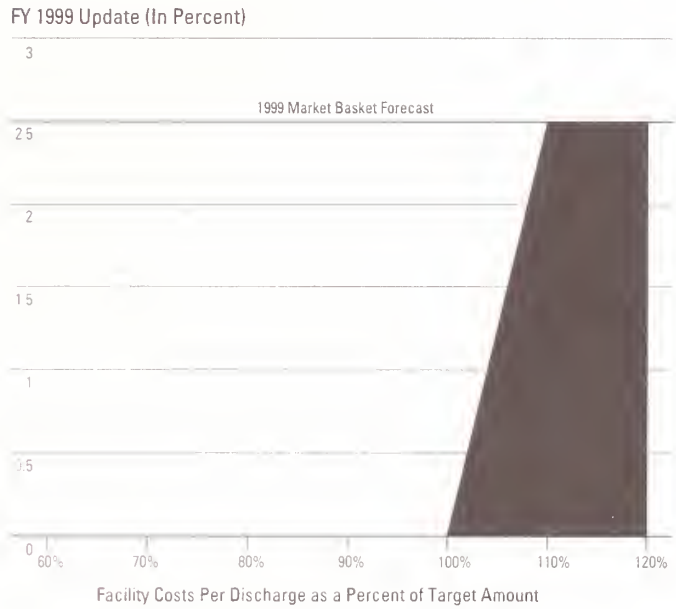
The BBA enacted major changes that are designed to decrease payment inequities across PPS- excluded facilities. These changes include payment limits for new providers; reduced updates to target amounts; opportunities for older providers to rebase, or raise, their targets; and further constraints on payments to high-cost PPS-excluded facilities. The changes likely will reduce payment disparities and slow the growth of new facilities. However, payments under TEFRA still cannot account for a key factor associated with variation in facility costs— differences in patient mix and treatment patterns.

Target Amounts

TEFRA's policies of cost reimbursement for new PPS-excluded providers, combined with facility-specific, historically based limits (target amounts) for existing providers, fueled growth in the number of new facilities and rewarded them financially. These policies gave facilities incentives to inflate their costs in their base year to establish high target amounts. Having established a relatively high target, a recent entrant could reduce its costs and be reimbursed its full costs, plus a bonus payment since its costs were below its target. Over time, however, a facility's target amount becomes less likely to reflect its current costs. Because of this, older facilities generally exhibit poorer financial performance under Medicare than newer ones.

Figure II-6-1

PPS-Excluded Provider Target Amount Updates, Fiscal Year 1999



SOURCE: Medicare Payment Advisory Commission analysis of the Balanced Budget Act of 1997.

NOTE: Updates for each facility are calculated using the most recently available cost reports. Update is zero if costs per discharge are less than 66 percent of target. Update is the market basket increase minus 2.5 percent if costs are between 66 and 100 percent of target

Updates

Target amounts are updated annually to reflect anticipated changes in input prices (including those for labor, supplies, and equipment) and for improvements in medical technology that are expected to affect costs. For fiscal years 1999 through 2002, the BBA established a facility-specific formula to update the targets. The formula is based on the forecasted annual increase in the Health Care Financing Administration's (HCFA) market basket index for PPS-excluded facilities.

The update amount for a given fiscal year will vary by facility, depending on the difference between a facility's costs and target for the most recent cost-reporting year. For example, a facility's fiscal year 1999 update amount likely will be determined based on its fiscal year 1996 costs and target. The update formula allows a higher update for providers whose costs exceed their targets than for those with costs below their targets (see Figure II-6-1). For example, assuming a forecasted increase of 2.5 percentage points,

[5] Medicare-allowable capital costs are reimbursed on a facility-specific basis. Beginning in fiscal year 1998, psychiatric, rehabilitation, and long-term care facilities are subject to a 15 percent capital payment reduction; cancer and children's hospital capital costs are reimbursed fully.

the formula would result in no update for a facility with costs under its target. Facilities with costs that are 10 percent or more above their targets would receive an update of 2.5 percent. For those with costs between their targets and 110 percent of them, the update would vary, ranging between zero and 2.25 percent. This complicated formula is designed to reduce the difference between a facility's costs and its target amount, and lessen payment inequities among PPS-excluded facilities. Given the formula, however, if the market basket forecast were less than 2.5 percentage points, some facilities with costs above their target amounts would receive no update.

Rebasing

To lessen payment inequities across providers, the BBA included a provision to allow older facilities to rebase their target amounts. The new targets, calculated from more recent data, will better reflect older facilities' current costs and increase their chance to be paid their full costs. Any facility excluded from PPS before fiscal year 1991 may rebase. The new target is determined using a facility's five latest settled cost reports as of August 5, 1997, adjusted for inflation. From these cost reports, the highest and lowest average cost per discharge are dropped, and a new target amount is determined from the remaining three reports.[3]

Caps

The BBA also enacted a provision designed to restrain payments to facilities with the highest target amounts. This provision, a target amount cap, applies to psychiatric hospitals and units, rehabilitation hospitals and units, and long-term care hospitals as of fiscal year 1998. Cancer and children's hospitals are not subject to the caps.

The caps are set separately for each facility class. They are defined as the 75th percentile of fiscal year 1996 target amounts, adjusted for inflation. For fiscal year 1998, target amounts for psychiatric facilities are capped at $10,547; rehabilitation facilities' targets are limited to $19,250; and long-term care hospital target amounts are capped at $37,688 (HCFA 1997). Unlike the payment limits for new PPS-excluded providers (discussed below), the caps are not adjusted to account for area labor costs.

The caps are intended to reduce inequities in TEFRA payments and control expenditure growth. They will affect facilities with the highest target amounts, which include many newer PPS-excluded providers. Since new entrants were not subject to payment limits prior to fiscal year 1998, these providers generally had higher target amounts, bonus payments, and Medicare payment-to-cost ratios than older facilities.

Bonus and Relief Payments

PPS-excluded providers also may receive either bonus or relief payments. A facility is rewarded with a bonus payment for keeping its costs under its target amount. Before fiscal year 1998, the bonus system consisted of a single payment that equaled a maximum of 5 percent of a facility's target amount. Under the BBA, the bonus system consists of two possible payments, which can total up to 3 percent of a facility's target.

The first of the two possible payments is made if a facility's costs are at or below its target amount. The facility receives 15 percent of the amount by which its target exceeds its costs, up to 2 percent of its target. A second payment (called a continuous improvement payment) is paid to qualifying facilities. This payment is half the amount by which a facility's current costs are less than its expected costs (that is, its prior year costs adjusted for inflation), up to 1 percent of its target amount. A facility qualifies for the second payment if it has been a PPS-excluded provider for three or more years, and its costs are less than its target amount, expected costs, and trended costs (that is, its base year costs adjusted for inflation). The goal of the two-part system is to allow a mechanism to reward facilities whose costs consistently are less than their target amounts.

A facility whose costs are over 110 percent of its target amount is eligible for relief payments. The relief payment is half the amount by which a facility's costs exceed 110 percent of its target, up to 10 percent of its target. Prior to the BBA, all facilities with costs exceeding their targets were eligible for relief payments.

Exceptions Payments

Under specific circumstances, facilities also may apply for exceptions payments. Providers may apply if their current costs are substantially higher than their base year costs due to changes in their patient or service mix, natural disasters, wage increases, or costs such as taxes or malpractice premiums. Most facilities seek these payments because of changes in their patient or service mix.

[3] Certain long-term care hospitals are allowed to use only fiscal year 1996 reports, adjusted for inflation, to determine their rebased targets. A facility qualifies for this option if, for two years, its costs exceed 115 percent of its target amount and its share of low-income patients is at least 70 percent. One facility qualified for this option.

Facilities apply for these payments retrospectively, and a multiyear lag exists between the time the payment is requested, reviewed and granted, and posted on a facility's applicable Medicare Cost Report. In 1996, for example, HCFA settled 519 applications representing payment requests for cost-reporting periods 1990 through 1993. Payments totaled $154 million and averaged almost $300,000 per applicant. Although exceptions payments may be substantial, detailed and timely information about them has been unavailable. As a result, accurate comparisons of total payments (including exceptions) and costs among PPS-excluded facilities are difficult, and ratios of payments to costs are understated, particularly in more recent cost-reporting years.[4]

New Provider Payment

The BBA also changed the payment method for new psychiatric, rehabilitation, and long-term care facilities. New PPS-excluded hospitals are defined as those operating in their first two full cost-reporting years; distinct-part units are paid under new provider rules during their first full reporting year. Previously, these facilities were paid their full Medicare-allowable costs, during which time their targets were determined. As of fiscal year 1998, payments to new providers are limited to amounts derived from the targets of existing PPS-excluded providers.[5]

New providers' payment limits equal 110 percent of the 50th percentile target amounts in fiscal year 1996 for existing facilities. These amounts are wage-adjusted and inflated to the fiscal year in which the new provider first receives payment under TEFRA. Fiscal year 1998 limits are $8,517 for psychiatric hospitals and units; $16,738 for rehabilitation hospitals and units; and $18,947 for long-term care hospitals (HCFA 1997).

Potential Effect of Target Amount Caps

The imposition of target amount caps on PPS-excluded facilities is key to reducing payment disparities among providers. To evaluate the possible impact of the caps, MedPAC analyzed both the characteristics of providers whose payments likely would be reduced because of the cap and the amount of the possible payment reduction. Because the Commission believes the caps should be adjusted to account for area labor costs, the analyses used wage-adjusted amounts rather than those published by HCFA.[6]

As intended, the caps likely will lessen the financial disparity among older and newer facilities subject to TEFRA payment rules. Absent behavioral and other policy changes, 40.4 percent of newer PPS-excluded facilities and 20.4 percent of older ones would have faced reductions in either their base payments or bonus amounts had the caps been imposed in fiscal year 1995. Most PPS-excluded facilities will be unaffected by the caps, though, reflecting their design to curb payment to the highest-cost facilities. A provider would not be affected by the cap if both its target and costs were less than the cap. A facility also would be unaffected if its costs exceeded the cap but its target was under it.

While the caps may reduce payment inequities among PPS-exempt facilities, they cannot account for several factors associated with appropriate variation in facility costs, such as case mix and treatment patterns. As a result, some facilities with high costs due to a more severe case mix, such as those specializing in burn treatment, would receive substantially lower payments because of the cap. It is difficult to assess the fairness of the cap and the adequacy of Medicare payments, however, without adequate case-mix measures.

Base Payments

A facility's base payment (that is, its costs or target amount) is reduced if the cap is less than both its costs and target. This is because the facility's base payment is the least of its costs, its target amount, or the cap. Had the cap applied in fiscal year 1995, 8.4 percent of all psychiatric, rehabilitation, and long-term care facilities would have received lower base payments (see Table II-6-5). About 18 percent of providers that came under TEFRA limits after fiscal year 1990 would have reduced base payments, compared with 5.4 percent of those subject to TEFRA in fiscal year 1990 or before. Because most PPS-excluded facilities have been operating under TEFRA for several years, though, almost one-half of providers with decreased base payments would be older facilities.

[4] Under the BBA, the Secretary of Health and Human Services is required annually to determine and publish in the *Federal Register* the amount of exceptions payments processed each year.

[5] New children's facilities will continue to be paid their full Medicare-allowable costs.

[6] Sensitivity analyses indicate that wage adjusting the caps generally increases the share of newer and rural facilities affected by the cap, and decreases the proportion of affected teaching facilities. The differences due to wage-adjustment were not substantial, however. The share of newer providers with reduced base payments due to an unadjusted and wage-adjusted cap is 16 percent and 18 percent, respectively.

Table II-6-5

Impact of BBA Target Amount Caps on PPS-Excluded Provider Payments

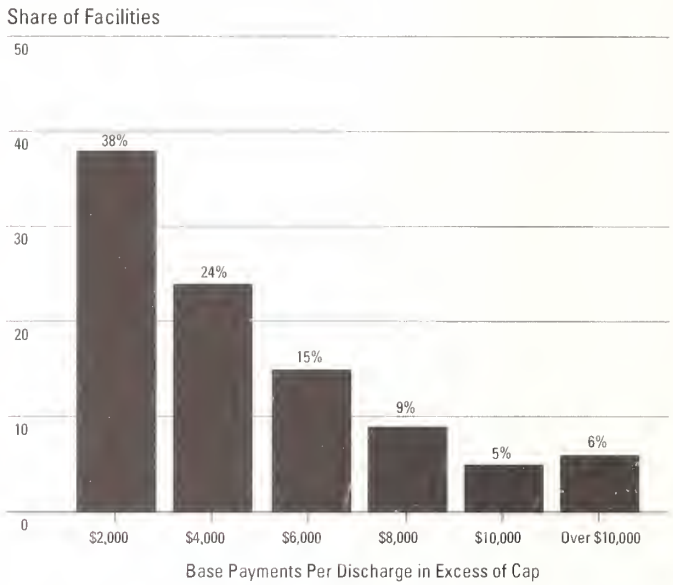
Facility Type	Share of Facilities with Payment Reductions Due to Cap	
	With Base Payment Reductions	With Bonus Payment Reductions
All facilities	8.4%	16.7%
Psychiatric	10.2	14.6
Rehabilitation	4.8	20.3
Long-term care	10.4	20.8
Newer facilities	18.3	22.1
Older facilities	5.4	15.0
Hospitals	9.7	25.7
Units	8.0	13.3
Teaching	7.9	11.9
Non-teaching	8.8	19.6
Government	13.8	12.9
Proprietary	11.1	28.9
Voluntary	5.8	13.0
Urban	7.6	15.3
Rural	11.7	21.9

SOURCE: Medicare Payment Advisory Commission analysis of the Balanced Budget Act of 1997 using Medicare Cost Report data.

NOTE: Base payments are calculated as the lesser of a facility's target amount and cost per discharge. The cap is wage and inflation adjusted. Newer facilities are those subject to TEFRA after 1990; older facilities are those subject to TEFRA in 1990 or earlier. BBA = Balanced Budget Act of 1997

Figure II-6-2

Distribution of PPS-Excluded Base Payments Per Discharge in Excess of Target Amount Cap



SOURCE: Medicare Payment Advisory Commission analysis of the Balanced Budget Act of 1997 using Medicare Cost Report data.

NOTE: Base payments are calculated as the lesser of a facility's target amount and cost per discharge. Cap is wage and inflation adjusted.

Of psychiatric and long-term care providers, 10.2 percent would have received lower base payments, compared with 4.8 percent of rehabilitation facilities. Since psychiatric providers constitute the largest class of excluded facilities, over three-fourths of all facilities with lower base payments would have been psychiatric facilities.

Of the high-cost facilities that would have been affected by the caps, most would have had relatively small reductions in base payments. For 38 percent of facilities, base payments would have been reduced by less than $2,000 per discharge (see Figure II-6-2). Payments would have been lowered by $2,000 to $4,000 per case for 24 percent of affected facilities. For 6 percent of facilities, however, base payments would have been lowered by $10,000 or more per discharge. Of the six facilities that would have faced base payment reductions greater than $20,000 per case, five were rehabilitation distinct-part units that specialize in treating burn patients.

Possible effects of the cap were analyzed by other provider characteristics, including facility ownership, geographic location, teaching activity, and hospital versus unit status. The caps would have lowered base payments for substantially higher shares of facilities that are government controlled, for-profit, and in rural areas. The caps also would have reduced base payments for slightly higher shares of hospitals (rather than distinct-part units) and for non-teaching facilities.

The BBA requires the Secretary of Health and Human Services to report to Congress on how the TEFRA provisions under the BBA might affect psychiatric hospitals with teaching programs. The cap alone does not appear to affect these facilities disproportionately. In fiscal year 1995, base payments would have been lowered for 30 percent of psychiatric hospitals with teaching programs, compared with 24 percent of non-teaching facilities. Since most psychiatric hospitals do not have teaching programs, 85 percent of those with reduced base payments would have been non-teaching facilities.

Bonus Payments

The cap also can lower a facility's bonus payment. This would occur if the cap is less than a facility's target amount but greater than its costs. In this circumstance, a provider's bonus payment would equal up to 3 percent of the cap, rather than 3 percent of the facility's (higher) target amount.

Analyses of the cap's effect on bonus payments suggest that 16.7 percent of facilities would have received reduced bonus payments. Of providers that came under TEFRA after fiscal year 1990, 22.1 percent would have had lower bonuses, compared with 15.0 percent of those subject to TEFRA in fiscal year 1990 or earlier. Bonus payments would have dropped for about 20 percent of both rehabilitation and long-term care providers and for 14.6 percent of psychiatric facilities.

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Chapter 7

Case-Mix Classification Systems for Skilled Nursing Facility and Rehabilitation Facility Services

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Case-Mix Classification Systems for Skilled Nursing Facility and Rehabilitation Facility Services

Since 1986, Medicare outlays for skilled nursing facility (SNF) services and rehabilitation facility services have increased, on average, 35 percent and 22 percent each year, respectively. Medicare's cost-based payment policies for these providers have contributed to this growth in spending. Although established SNFs and rehabilitation facilities are subject to cost limits, in SNFs this is true only for routine costs, which include room, board, and nursing services.* Routine cost limits are applied to established SNFs on a per diem basis, creating few incentives for providers to limit length of stay. At the same time, since there are no limits on ancillary costs, Medicare's payment policies reward SNFs that increase the number of ancillary services they furnish.

Medicare's payments for rehabilitation facilities are provider-specific, based on their actual costs for one of their first years in operation. New facilities thus have had incentives to elevate their costs per discharge in order to raise the limits to which they will be held in future years. Once they become established, these providers are rewarded for reducing per discharge costs, which they have done largely by cutting lengths of stay.

To slow expenditure growth for skilled nursing and rehabilitation facility services, the Balanced Budget Act (BBA) of 1997 mandated the implementation of case-mix adjusted prospective payment systems. These systems base payments on a package or bundle of services, which create incentives for providers to control the volume of services (within the bundle) they furnish to each patient. Payments may, for example, be made for groups of services provided during a day, an admission, or a month.

Case-mix adjustment is needed, though, to ensure that payments are higher for patients with more intensive resource needs and lower for those who require fewer services. Without such adjustment, providers would profit from treating only patients with lower-than-average resource costs since the bundled payment is generally based on average costs for all patients. A case-mix classification system that accounts for appropriate differences in the types of services furnished or patients served helps the insurer avoid paying too much for some patients and too little for others, thereby making fair payments to providers and ensuring access to services for patients.

One of the biggest challenges the Health Care Financing Administration (HCFA) faces in implementing prospective payment systems for SNFs and rehabilitation facilities is the development of case-mix classification systems that adequately predict the resource utilization or costs of different types of patients. HCFA has conducted extensive developmental work on a classification scheme called the resource utilization groups, version III (RUG-III) system for use with both Medicare and Medicaid patients in nursing facilities. At the same time, the rehabilitation industry has supported the development of a classification system called the functional independence measure-function related groups (FIM-FRG) for use in rehabilitation facilities. HCFA, however, has suggested that the RUG system be used for both SNF and rehabilitation facility payment. This chapter reviews the RUG and FIM-FRG systems and their suitability for use in SNFs or rehabilitation facilities.

* Prior to the passage of the Balanced Budget Act of 1997, new facilities were not subject to any cost limits during the first several years of operation.

Developing Case-Mix Classification Systems

A case-mix classification system identifies the patient or service characteristics associated with different levels of resource utilization. Numerical weights are calculated based on the relationship between each patient or service characteristic and level of resource use. These weights then are applied to the prospectively determined base payment rates established under a prospective payment system (PPS) to increase payments for patients who are expected to be more resource intensive (and therefore more costly) and decrease payments for patients who are less resource intensive than average. Without this adjustment, providers would face strong financial incentives to seek low-cost cases, avoid high-cost ones, and skimp on treatment.

Since the same base payment is made for each group, cases or services assigned to a group within a case-mix classification system should be relatively homogeneous in terms of resource use. At the same time, the groups within a classification system should be clinically distinct so that providers cannot easily "upcode" patients into higher-weighted groups. That is, a case-mix classification system should provide few opportunities for gaming by limiting the extent to which providers can increase reimbursement by manipulating assignment to groups based on factors unrelated to patient needs.

Unfortunately, identifying patient needs can be difficult, particularly in post-acute care settings like nursing and rehabilitation facilities.[2] Post-acute care is marked by long lengths of stay, relatively low intensity of care, and little consensus regarding appropriate patterns of care (Vladeck and Kramer 1988). Outcomes are difficult to measure, particularly for patients needing skilled nursing (as opposed to rehabilitative) care. Some researchers and policy makers believe that these characteristics will make it relatively easy for providers to game the payment system by furnishing more or fewer services than are needed in order to maximize payment. This possibility may be more likely in post-acute care settings than in other sites because facility staff has comparatively more flexibility to decide whether to furnish services (Smits 1984). Separate case-mix classification systems have been developed and are being tested for use in SNFs and rehabilitation facilities. These two systems are described below.

Case-Mix Classification in Skilled Nursing Facilities

Researchers have found no adequate case-mix models that correlate SNF patient characteristics with length of stay or episode costs (Fries et al. 1994). This may be because many researchers thought it was desirable to develop a classification system that could adequately explain the resource use of both Medicare and Medicaid patients, who can have dramatically different lengths of stay. As a result, nursing home case-mix research has focused on explaining per diem resource use. Factors include patients' clinical characteristics, functional status, and services received.

HCFA is using the RUG-III classification system in its demonstration project testing a combined Medicare and Medicaid nursing home payment and quality monitoring system. The classification system was designed using resident characteristics and wage-weighted staff time (Fries et al. 1994). Resident characteristics were derived from the Minimum Data Set, which Medicare requires certified SNFs to use to assess resident functional status and to develop plans of care. The staff time required to care for groups of residents was measured over a 24-hour period for nursing staff and over the span of a week for ancillary services. Resident characteristics and wage-weighted staff time were collected for 7,648 residents in 202 nursing homes in Kansas, Maine, Mississippi, Nebraska, New York, South Dakota, and Texas from March to December 1990.

The RUG-III system sorts patients into groups based on certain clinical conditions. Within each of these groups, patients are further sorted according to the number and types of services used and their functional status (as measured by an index of activities of daily living or ADLs) (see Table II-7-1).[3] This results in a total of 44 RUGs. Patients requiring rehabilitation services, for example, are divided into four levels of intensity, described using total minutes of therapy per week, days of therapy per week, and the number of types of therapy received. These four groups are further split by the ADLs patients can accomplish. Four of the seven patient groups based on clinical conditions—rehabilitation, extensive services, special care, and clinically complex—represent the Medicare coverage criteria for rehabilitation and skilled nursing services. (The remaining three pertain to Medicaid patients.) The RUG-III system reportedly explains over 50 percent of the variation in daily resource use (Fries et al. 1994).

[2] Other post-acute providers include home health agencies and long-term care facilities.

[3] The ADLs measured are bed mobility, toilet use, transfer, and eating. Counts of services include the number of nursing rehabilitative services (that is, providing active or passive range of motion, splint/brace assistance, and training in such activities as transferring, dressing/grooming, eating/swallowing, or locomotion/mobility); extensive treatments (that is, suctioning or parenteral feeding); or indications of depression.

Table II-7-1

Characteristics of the RUG-III Patient Classification System

Patient Types	Number of RUGs	Variables
Rehabilitation (special)[1]	12	TI, TT, NR; ADL
Extensive services	3	T
Special care	3	ADL
Clinically complex[2]	8	ADL, D
Impaired cognition	4	ADL, NR
Behavior problems[3]	4	ADL, NR
Physical functions (reduced)[4]	10	ADL, NR
Total	44	

SOURCE: Brant E. Fries et al., "Refining a Case-Mix Measure for Nursing Homes: Resource Utilization Groups (RUG-III)," *Medical Care* 32:7:668-685, July 1994.

NOTE: Variables are the patient characteristics and service needs used to divide categories into RUGs.
TI = therapy intensity, TT = type of therapy, NR = nursing rehabilitation, ADL = activities of daily living, T = treatment, D = depression.

[1] Patients requiring any combination of physical, occupational, or speech therapy.
[2] Patients with a RUG ADL score of at least 7 and who meet at least one of the following criteria: parenteral feeding, suctioning, tracheostomy, ventilator/respirator.
[3] Patients with a RUG ADL score of at least 7 and who require special care (for example, burns, coma, quadriplegia, septicemia, radiation therapy).
[4] For example, dialysis, aphasia, pneumonia, cerebral palsy.
[5] Patients exhibiting symptoms such as wandering, hallucinations, or physical or verbal abuse of others.

Medicare patients are assessed for purposes of RUG assignment shortly after admission. Twice thereafter during the SNF stay (between days 31 and 60 and between days 61 and 90), RUG assignment may be reassessed.

One potential problem with the RUG-III system is its reliance on service provision as a predictor of resource use. Some researchers and policy makers believe that RUG-III will create incentives for providers to furnish more services than are needed. That is because, under this system, when providers furnish more services, patients are classified into case-mix categories that command higher payments.

Alternatively, patient functional status alone could be used as a predictor of resource costs. The problem with this method, though, is that it would reward facilities with higher payments if patients' functional status deteriorated, a possibility in a setting where length of stay averages 28 days. For this reason, service provision is thought to be preferable over patient functional status because it will result in the most services to patients and, ideally, the best patient outcomes.

An additional concern is that the RUG-III system may not adequately differentiate among Medicare SNF patients, particularly those needing high levels of rehabilitative care. This may lead to significant overpayment or underpayment for patients within a RUG group.

A final issue pertains not to the RUG system per se, but to the unit of payment for which it was designed. The RUG system is used with per diem payment, so prospective payment will be made for all care, including ancillary services, furnished during the patient day. The payment system will thus encourage providers to control costs by furnishing fewer services per day. Providers could increase their total revenues, however, by lengthening the patient stay.

Case-Mix Classification in Rehabilitation Facilities

When the prospective payment system for hospital inpatient services was enacted in 1983, rehabilitation hospitals and units were excluded because the diagnosis-related groups the system used did not adequately describe the resources used by rehabilitation patients. Since then, functional status has been shown to be strongly associated with rehabilitation length of stay and charges (Stineman et al. 1994).

The FIM-FRG system classifies patients according to their impairment and functional status at admission, as measured by ADLs, communication skills, and cognition (Stineman et al. 1994; Stineman et al. 1997b). The most recent version was developed using 1992 data for 92,705 adult patients from 252 rehabilitation facilities located across the United States. The information was obtained from the Uniform Data System (UDS) for medical rehabilitation research data base, which is the largest national registry of standardized information on medical rehabilitation inpatients. The UDS collects data on each patient's age, sex, living situation prior to hospitalization, diagnosis leading to disability, and functional status at admission and discharge. Additional information for each patient includes the dates of admission and discharge, admission source, whether the admission was for evaluation only, whether the admission was a readmission, whether the rehabilitation stay was interrupted by a transfer to an acute care hospital, discharge destination, and total hospital charges. About half of Medicare-certified rehabilitation hospitals and about a quarter of rehabilitation units submit information to UDS. Analysis has shown the UDS to be representative of most rehabilitation facilities in the United States.

Table II-7-2

Characteristics of the FIM-FRG Patient Classification System, Version 2.0

Rehabilitation Impairment Categories (RICs)	Number of FRGs	Variables
Stroke	9	M, C, A
Brain dysfunction, traumatic	5	M, C
Brain dysfunction, nontraumatic	4	M, A
Spinal cord dysfunction, traumatic	4	M
Spinal cord dysfunction, nontraumatic	4	M
Guillain Barré	2	M
Neurological, other	2	M
Orthopedic, lower extremity fracture	4	M, C
Orthopedic, joint replacement	7	M, C, A
Orthopedic, other	2	M
Arthritis, osteo	2	M
Arthritis, rheumatoid and other	2	M
Amputation, lower extremity	2	M
Amputation, other	1	–
Cardiac	3	M
Pulmonary	2	M
Pain Syndrome	2	M
Major multiple trauma	2	M
Major multiple trauma with brain/spinal injury	3	M, C
Miscellaneous	3	M
Evaluation only	2	M
Total	67	–

SOURCE: Margaret G. Stineman et al., "Development of Function-Related Groups Version 2.0: A Classification System for Medical Rehabilitation," *Health Services Research* 32(4): 529-548, October 1997.

NOTE: Variables are the patient characteristics used to divide RICs into FRGs (FIM – FRG= functional independence measure – function related groups). M = motor subscale. C = cognitive subscale. A = age.

The FIM-FRG system divides patients into 20 mutually exclusive rehabilitation impairment categories (RICs) based on the diagnosis leading to disability (see Table II-7-2). Patients are then further divided into 67 FRGs based on their functional status (motor skills and cognitive function) and age. As might be expected in a classification system designed for use with rehabilitation patients as opposed to nursing facility patients, the FIM-FRG system uses many more ADLs to evaluate functional status, including grooming, bathing, dressing, and stair ascending and descending.

HCFA funded a study to evaluate FIM-FRGs for their suitability as the basis of a Medicare prospective payment system for rehabilitation facilities (Carter et al. 1997). The stability of the FRGs was examined by using them to predict the resource utilization of patients in the 1994 UDS. In addition, the performance of FRGs was evaluated when resource use was based on cost per discharge rather than length of stay and when data were restricted to Medicare patients. The study found that FIM-FRGs were robust, effective predictors of both the length of stay and the cost of Medicare cases. The explanatory power of the FRGs ranged from 31 percent to 34 percent for these variables. In addition, the predictive accuracy of the FRGs has been found to be stable over time, even as the length of stay in rehabilitation facilities has declined (Carter et al. 1997; Stineman et al. 1997b).

A companion system to the FIM-FRG system (called the functional gain FRGs) has been developed that could allow payments to providers to be adjusted to reflect differences in patient outcomes. This could help to counteract any financial incentives to reduce costs by reducing quality of care (Stineman et al. 1997a).

One stumbling block to moving forward with the FIM-FRG system has been the proprietary nature of the data from which they were developed. Without access to the data collection instrument, HCFA would need to develop its own instrument and then collect the necessary information from facilities to validate the adequacy of the classification system. In addition, the FRGs have yet to be tested for payment purposes.

Considering a Case-Mix Classification System for Both SNF and Rehabilitation Facility Services

Traditionally, the types of beneficiaries treated and the mix of services furnished have differed across post-acute care providers. Rehabilitation facilities, for example, have specialized in intensive rehabilitation services and primarily treated patients with orthopedic or neurological disorders, while SNFs have emphasized skilled nursing care. This specialization has led to a segmented industry with multiple providers delivering distinctly different services and levels of care. Reflecting this specialization, Medicare has implemented different coverage policies and payment methods based on the site of care rather than on the types of services furnished.

Today, distinctions among these providers are less clear. Increasingly, both the types of patients treated and the services furnished by different post-acute care providers overlap. Patients with the same acute care diagnosis receive post-acute care in a variety of settings, although they may be more inclined to go to some settings than to others. For example, of the patients hospitalized for major joint procedures of the lower extremity who went on to use post-acute care, 15.3 percent used only SNF care within 30 days after hospital discharge, while 18.3 percent used only rehabilitation facility care (ProPAC 1996) (see Table II-7-3). Of the patients hospitalized for a stroke who went on to use post-acute care, 38.6 percent used only SNF care within the 30 days after hospital discharge, while 18.5 percent used only rehabilitation facility care.

Table II-7-3

Use of Skilled Nursing and Rehabilitation Facilities After PPS Hospital Discharge, by Selected DRGs, Fiscal Year 1994

DRG	Description	Discharges Using Post-Acute Care*	Of Discharges Using Post-Acute Care, Beneficiaries Used Only: SNF	Rehabilitation Facility
14	Specific cerebrovascular disorders except TIA	51.3%	38.6%	18.5%
209	Major joint and limb reattachment procedures of lower extremity	73.6	25.5	11.7
210	Hip and femur procedures except major joint age >17 with CC	77.4	54.8	8.5
471	Bilateral or multiple major joint procedures of lower extremity	80.3	15.3	18.3

SOURCE: Medicare Payment Advisory Commission analysis of MedPAR and home health claims data

NOTE: DRGs were assigned during PPS hospital stay. Post-acute care began within 30 days of PPS hospital discharge. DRG = diagnosis-related group. SNF = skilled nursing facility. TIA = transient ischemic attack. CC = complication and/or comorbidity.

* These discharges used skilled nursing facility, rehabilitation facility, home health agency and/or long-term care hospital services. Discharges not receiving care from these providers may have gone home, returned to an acute care hospital, died, or received post-acute care in other settings, like hospital outpatient departments.

Nevertheless, there continue to be some differences in the types of patients served by rehabilitation facilities and SNFs. Medicare coverage policies allow SNFs to treat a wider variety of patients, including those with very low functional ability who may not benefit from intensive therapy but rather need skilled nursing care. In rehabilitation facilities, three diagnosis-related groups (DRGs) (209, 14, and 210) representing stroke and hip fracture patients accounted for 44 percent of all rehabilitation hospital patients and 48 percent of all rehabilitation unit patients in 1994 (ProPAC 1996). Those same three DRGS accounted for only 22 percent of all SNF stays. SNFs also treated a relatively large number of patients with pneumonia and other respiratory infections, nutritional and metabolic disorders, kidney and urinary tract infections, septicemia, and chronic obstructive pulmonary disease. Even among patients with similar diagnoses, patient characteristics, such as medical complexity or functional status, may differ across post-acute care settings.

Although both SNFs and rehabilitation facilities serve patients needing intensive rehabilitation, significant differences have been found in the patterns of care they furnish to these patients. One study found that patients with hip fracture or stroke who received rehabilitation services in SNFs got more total nursing hours during their stays than did patients with the same diagnoses in rehabilitation facilities, while rehabilitation facility patients got more skilled nursing time (Schlenker et al. 1997). Rehabilitation facility patients, especially those recovering from stroke, also received significantly more hours of ancillary services, such as physical therapy and occupational therapy. At the same time, length of stay in rehabilitation facilities was shorter, averaging 18.9 days and 26.0 days for hip fracture and stroke patients, respectively, in rehabilitation facilities, and 29.9 days and 31.8 days for patients with the same diagnoses in SNFs.

Thus, rehabilitation facilities furnish care to stroke and hip fracture patients that is more resource-intensive over a shorter period of time than do SNFs. Some of the variation in the patterns of care provided was explained by differences in the types of patients treated in the two facilities. SNF patients not only tended to be older and more functionally and cognitively impaired, but also seemed to have more comorbidities. Differences in case mix could not totally explain the differences in treatment patterns, however.

The overlap in the patients treated and services furnished by SNFs and rehabilitation facilities has implications for the implementation of separate payment systems for these (and other) providers. After prospective payment systems are in place, it will be easier to compare the different payments Medicare makes to various providers for similar services. To the extent that payments relative to costs vary across sites of service, providers may, over time, choose to furnish only certain types of services or to treat only certain types of patients. This could compromise patients' access to care. In addition, as the number of integrated health systems grows, so too will providers' ability to steer patients to certain settings in order to maximize reimbursement.

Medicare will thus need to consider whether it is paying too much for some services in certain settings, or whether differences in the types of patients treated or outcomes achieved justify differences in reimbursement levels. For example, despite the higher costs of care in rehabilitation facilities, these providers do not appear to achieve better outcomes than SNFs in treating patients with hip fracture. On the other hand, stroke patients receiving treatment in rehabilitation facilities have been shown to have significantly better outcomes than their SNF counterparts, even after adjusting for differences in case mix (Kramer et al. 1997).[4]

Further, under prospective payment systems that pay for a bundle of services, the overlap in services furnished will make it relatively easy for providers to "unbundle," that is, to lower their costs by discharging patients to other settings rather than providing the full spectrum of services themselves. When patients use more than one post-acute care provider during an episode of illness, effective case-mix classification systems should help to prevent overpayment to subsequent providers. But other mechanisms may be needed to control overall Medicare spending should such patterns of care develop.

Because of these issues, it would be prudent for Medicare to move toward more uniform payment policies across post-acute care settings, with payment amounts varying depending on the intensity and nature of the services required, rather than on the site of service. With this goal in mind, HCFA has begun to consider the use of one classification system, RUG-III, for both skilled nursing and rehabilitation facilities. Preliminary research, however, suggests that the RUG-III system may not adequately differentiate among rehabilitation facility patients (Eilertsen et al. 1997).

Nevertheless, inpatient rehabilitation services, which are provided in both rehabilitation and skilled nursing facilities, are an ideal starting point for the development of consistent payment policies. To develop a robust case-mix classification system for these services, Medicare must understand the similarities and differences in services and patients across settings. This can be done only by requiring the use of a common patient assessment tool. The Minimum Data Set used to assess patients in SNFs, for example, could be modified for use in rehabilitation facilities as well. Comparable patient assessment information would allow Medicare to pay appropriate amounts for the services patients need, regardless of site. At the same time, since the goal of rehabilitation is to improve patients' functional status, some measurement of outcomes as an indicator of quality of care may be possible for these patients.

[4] Stroke patients treated in rehabilitation facilities were more likely to return home and to have significantly better functional recovery.

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Chapter 8

Physician Payment Policy

Chapter 8

Physician Payment Policy

Medicare physician payment policy continues to evolve as the Congress and the Health Care Financing Administration (HCFA) strive to base payment on the resource costs of providing physicians' services. In 1998, the most important policy developments toward this end include a shift from three conversion factors to one, the continued work on formulating resource-based practice expense relative values, and increases in the work relative values of global surgical services. In addition, the volume performance standard (VPS) system was replaced in 1998 by the sustainable growth rate system to control future increases in the volume and intensity of physicians' services provided to Medicare beneficiaries.

This chapter focuses on how these policy changes have affected payment. It begins by describing the sustainable growth rate system and the move to a single conversion factor. (The development of resource-based practice expense relative values is addressed in Volume 1, Chapter 10.) It then analyzes changes in physician payment rates for 1998. The separate effects of the single conversion factor, changes in work relative values for global surgical services, and the beginning of the move toward resource-based practice expense relative values are illustrated. The chapter then relates the Medicare Payment Advisory Commission's plans for monitoring access to care as payment rates undergo substantial shifts.

Sustainable Growth Rate System

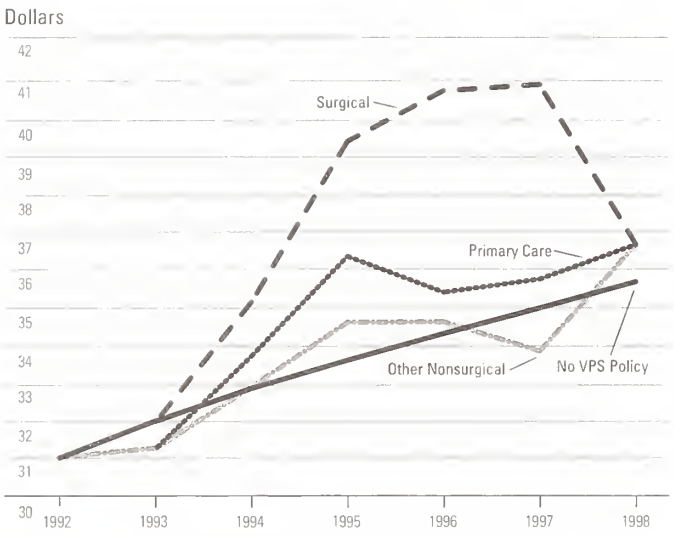
Payments for physicians' services under the Medicare Fee Schedule are based on the principle that payments for different services should reflect their relative resource use. Physicians are viewed as incurring three distinct types of costs to produce a service: their own time, energy and skill (referred to as physician work); practice expenses such as medical equipment and office space; and malpractice insurance premiums. The Medicare Fee Schedule, therefore, calculates a total relative value for each service that is the sum of these three components: physician work, practice expense, and malpractice expense relative values.

Payment levels are determined by these relative value units (RVUs) and a conversion factor that translates relative values into dollar amounts for each service. For example, when the Medicare Fee Schedule was first implemented in 1992, physicians were paid $31.00 per RVU for all services. A physician providing a service with 10 RVUs would have been paid $310 for that service. The initial conversion factor was set so that total outlays under the Medicare Fee Schedule would be the same as they would have been under the previous payment method.

When the Medicare Fee Schedule was first established, a volume control mechanism was adopted to curb the rise in spending for physicians' services by linking payment to growth in the number and mix of services physicians provide. Called the volume performance standard system, this approach set annual updates to the conversion factors to hold spending growth to target rates. The system, however, had several methodological flaws that prevented it from operating as intended.

Figure II-8-1

Comparison of Moving to a Single Conversion Factor in 1998 and No Volume Control Policy



SOURCE: Medicare Payment Advisory Commission compilation of conversion factors and annual percentage changes in the Medicare Economic Index from the *Federal Register*

NOTE: Moving to a single conversion factor in 1998 in conjunction with the adoption of the sustainable growth rate system will lead to large changes in payment for surgical and other nonsurgical services. This policy results in a conversion factor somewhat higher than one in which no voulme performance standards (VPS) policy had been in place, but the conversion factor had been increased each year by the percentage change in the Medicare Economic Index

On January 1, 1998, the Balanced Budget Act (BBA) of 1997 replaced the VPS system with the sustainable growth rate system, which will resolve many of the former system's limitations. First, because the VPS system set separate conversion factors for three categories of service, it undermined the goals of the Medicare Fee Schedule by distorting relative payments across surgical, primary care, and other nonsurgical services. In 1997, the conversion factor for surgical services was $40.96 compared to $35.77 for primary care services and $33.85 for other nonsurgical services. The BBA remedies this disparity by establishing a single conversion factor of $36.69, calculated from the weighted average of the overall update that would have occurred under prior law and applied to the conversion factor for primary care services.

Although the move to the single conversion factor caused a large one-time change in payment for both surgical services and other nonsurgical services, the final level of payment is close to what it would have been had the VPS system not been implemented. If the 1992 conversion factor of $31.00 had been increased each year by the percentage change in the Medicare Economic Index (MEI) rather than through the VPS policy, the conversion factor for 1998 would have been $35.70 instead of $36.69 (see Figure II-8-1). Therefore, the new single conversion factor is higher than it would have been if the annual updates had reflected only increases in inflation.

A second limitation of the VPS system came from methodological flaws that led to progressively more stringent spending targets over time. The VPS system set annual target rates of spending growth called performance standards. Two years later, it adjusted conversion factors to hold actual spending growth to the target rates. Performance standards were based on the five-year average for volume and intensity growth and a legislated deduction to slow the spending growth rate.[1]

When the first performance standards were set, the historical average rate of growth was high and only a small legislated deduction of 0.5 percentage points was taken. At the time, it was expected that the volume and intensity growth would remain high, but that small reductions could be taken to account for potential inefficiencies and inappropriate care included in the historical trend.

Over time, however, the historical average growth in volume and intensity fell dramatically, from about 8 percent in 1992 to roughly 3 percent in 1996. This drop led to large gains in the conversion factor in 1994 and 1995. For example, the conversion factor updates for surgical services were 10 percent and 12 percent, respectively. Moreover, while the historical average growth was falling, the legislated deduction was gradually increased from 0.5 percentage points initially to 4.0 percentage points. The VPS system was becoming unrealistically stringent because low historical averages were combined with large legislated deductions.

[1] The Secretary is required to estimate the average annual percentage growth in volume and intensity from the most recent annual report issued by the Board of Trustees of the Supplementary Medical Insurance Trust Fund. Annual volume and intensity growth is calculated as the residual of growth in total allowed charges per enrollee after accounting for increases due to price changes.

The new system will hold spending growth for physicians' services to that of the general economy by linking updates of the conversion factor to the sustainable growth rate, which reflects medical inflation, changes in enrollment, growth in the economy, and changes in spending due to changes in laws and regulations. Specifically, it is determined from:

- the percentage increase in fees for Medicare physicians' services;[2]
- the percentage increase in Part B enrollees, excluding those in risk contracts;
- the projected growth of real gross domestic product (GDP) per capita; and
- the percentage change in spending for physicians' services resulting from changes in laws and regulations, but not from the sustainable growth rate system.

The sustainable growth rate for 1998 is 1.5 percent. As described above, this reflects a 2.3 percent increase in fees for physicians' services, a 2.4 percent decline in Part B enrollment, a 1.1 percent expected growth in real GDP per capita, and a 0.6 percent projected increase in spending from changes in laws and regulations. The drop in Part B enrollment stems from continued growth in Medicare managed-care enrollment. The changes in spending due to the changes in laws and regulations reflect provisions in the BBA that expand coverage of preventive services and extend direct Medicare payment to nurse practitioners, clinical nurse specialists, and physician assistants.

While the sustainable growth rate is similar to performance standards under the VPS system, the new system calculates the conversion factor update in a substantially different manner from the previous system. First, it establishes baseline spending in 1997, then calculates total allowed spending based on increases at the sustainable growth rate. The conversion factor is updated at the beginning of each year, so that projected spending for physicians' services will meet the allowed level at year-end. The update is lower if spending is expected to exceed the budgeted amount, but higher if it is expected to be less.

Although the sustainable growth rate system corrects many inadequacies of the previous approach, it also has potential problems. Unlike the VPS system, the new one brings spending to the budget limits within a single year and can potentially provide very large increases or reductions. To prevent substantial annual changes in payment, the size of annual updates is limited to 3 percentage points above the percentage change in the MEI and 7 percentage points below. Although this could lead to actual spending above or below the budget limits in any given year, these would be made up in subsequent years because the adjustments are based on accumulated spending since 1997. The limits moderate swings in payment somewhat, but do not prevent fluctuations in payment where a cut in one year is followed by an increase in the next. Future refinements of the sustainable growth rate system could be devised to provide smoother adjustments over a period longer than a single year.

Physician Payment Rates for 1998

Medicare physician payment rates for 1998 reflect three policy changes: (1) a single conversion factor instead of three different ones for surgical services, primary care, and other nonsurgical services; (2) increases in work relative value units for some services; and (3) adjustments in practice expense relative value units for some services. This section shows the effects of each of those policy changes on payment rates. Because some services will experience substantial declines in payment, this section also discusses ways to monitor beneficiary access to care so that the Commission can inform the Congress of any significant changes.

Effects of Policy Changes on Payment Rates

The shift to a single conversion factor affected payment rates for all services in 1998. For each service, the change in payment depended on the conversion factor used for that service in 1997 (see Table II-8-1). The conversion factor for primary care services, such as office visits, will increase by 2.6 percent. The conversion factor for other nonsurgical services, such as consultations, will grow by 8.4 percent.[3] There will be a 10.4 percent decrease in the conversion factor for surgical services.

A second policy change for 1998 increases work RVUs for global surgical services—procedures that include a surgical service as well as certain preoperative and post-operative evaluation and management (EM) services. EM work values were raised for 1997 as a result of the five-year review of the relative value scale, but the corresponding EM components of global surgical services were not changed. Higher work RVUs for 1998 correct that inconsistency. Among those surgical services responsible for the largest shares of Medicare physician payments, increases in payment rates due to the higher EM work values will range from 1.3 percent to 3.4 percent (see Table II-8-1).

[2] Changes in physicians' fees are estimated as the weighted average of the MEI for physicians' services and the Consumer Price Index for Urban Consumers (CPI-U) for laboratory services.

[3] Within the Commission's type of service classification scheme, some services in the other nonsurgical category show an increase of slightly less than 8.4 percent. The difference is due to inclusion of surgical services in some categories that are otherwise made up mainly of other nonsurgical services.

Table II-8-1

Effects of Policy Changes on Physician Payment Rates, 1997-1998 (In Percent)

Type of Service	Single Conversion Factor	Work Increases	Practice Expense Adjustments	Total Change	Percentage of 1996 Physician Services Outlays
Primary care services					
Office and other outpatient visits	2.6%	0.0%	4.3%	7.0%	16.8%
Emergency department services	2.6	0.0	0.0	2.6	2.7
Surgical services					
Cataract lens replacement	-10.4	1.3	-5.8	-14.4	4.8
Joint prosthesis	-10.4	3.2	-2.9	-10.2	1.5
Coronary artery bypass graft	-10.4	2.7	-3.8	-11.4	1.6
Transurethral prostate surgery	-10.4	3.2	-0.1	-7.6	0.3
Arthroscopy	-10.4	1.7	-5.0	-13.3	0.3
Open prostate surgery	-10.4	3.4	0.0	-7.4	0.1
Other nonsurgical services					
Consultations	8.4	0.0	0.0	8.4	5.7
Routine diagnostic radiology	8.4	0.0	0.0	8.4	3.2
Electrocardiograms	8.4	0.0	-0.9	7.4	2.1
Echocardiograms	8.4	0.0	-2.4	5.8	1.9
CAT scans	8.4	0.0	0.0	8.4	1.7
Colorectal endoscopy	8.1	0.0	-3.9	3.8	1.6
Magnetic resonance imaging	8.4	0.0	0.0	8.4	1.3
Upper GI endoscopy	8.3	0.0	-6.5	1.3	1.2
Angioplasty	8.4	0.0	-4.7	3.2	0.6

SOURCE: Medicare Payment Advisory Commission analysis of 1996 Medicare claims, 100 percent of beneficiaries; 1997 and 1998 Medicare Fee Schedule relative value units

The third policy change affecting payments in 1998 is the adjustment to practice expense RVUs called for by the BBA. The law limits practice expense values to 110 percent of each service's work value. Two groups of services are excluded from this limit:

- those provided in an office setting at least 75 percent of the time, and
- those slated to receive an increase in practice expense values under a proposed rule released by HCFA on June 18, 1997.

To implement the 110 percent limit in a budget-neutral manner, the savings generated will be reallocated to increase the practice expense values of office visits. This reallocation is intended to be a downpayment toward changes in office visit values that are expected when resource-based practice expense values are implemented beginning in 1999. The BBA specifies that up to $390 million can be reallocated to office visits in 1998.[4]

These adjustments will lead to decreases in practice expense RVUs for both surgical services and nonsurgical services other than primary care (see Table II-8-1). The surgical service that will be affected the most by the practice expense adjustments will be cataract lens replacement. Because of the adjustments, that service will see a decrease in payment rates of 5.8 percent in 1998. The upper gastrointestinal (GI) endoscopy decrease of 6.5 percent will be the largest decrease among other nonsurgical services. Office visit payment rates will increase by an average of 4.3 percent.

The total change in payment rates for 1998 will reflect the combined effects of the single conversion factor, the increase of work RVUs for global surgical services, and the adjustments in practice expense RVUs for some services (see Table II-8-1). By type of service, changes will range from an increase of 8.4 percent for some nonsurgical services to a decrease of 14.4 percent for cataract lens replacements. In general, surgical services will see decreases in payment rates primarily because of the move to a single conversion factor. Payment rates for other services will increase.

[4] The $390 million limit on reallocation of practice expense payments to office visits applies to 1998 only. Since 1998 practice expense values will be used during the transition to resource-based practice expense RVUs, the adjustment to practice expense RVUs required by the BBA will affect payment rates throughout the transition, from 1999 through 2001.

Monitoring Access to Care

The changes in payment rates that were implemented in 1998 underscore the importance of monitoring beneficiary access to care as closely as when the fee schedule was implemented in 1992. Some of the reductions in payment rates will be large, and, for some services, they will compound with cuts that have occurred since the fee schedule was introduced (see Table II-8-2). Access monitoring can show whether physicians receiving lower payments have become less willing to provide services to beneficiaries.

The Commission's June 1998 report will include analyses of beneficiary access that will illustrate how access can be monitored after the changes in payment rates for 1998 are implemented. Because beneficiaries' experience in obtaining care is affected by a number of factors, the Commission has adopted a strategy to capture the multiple dimensions of access (PPRC 1997). Access monitoring encompasses the perspectives of both beneficiaries and physicians. Data from multiple sources will be used since no single data set can fully address all aspects of access to care.

Medicare claims data provide one source of information for access monitoring. The beneficiary diagnoses and measures of service use in those data will allow the Commission to analyze clinically based indicators of access. These indicators address beneficiary use of specific services considered necessary for the care of different acute and chronic conditions.

Commission analyses will also use data from the Medicare Current Beneficiary Survey, which includes a variety of questions about access to care. These questions address such issues as difficulty in obtaining care, use of a physician or physicians' office as a usual source of care, and satisfaction with the care received. Like changes in clinically based indicators of access, changes in beneficiary responses to such survey questions are an early indication of possible access problems.

Table II-8-2

Change in Payment Rates for Selected Services, 1991-1996 (In Percent)

Type of Service	Annual Percentage Change
Primary care services	
Office and other outpatient visits	4.3%
Emergency department services	8.0
Surgical services	
Cataract lens replacement	-6.5
Joint prosthesis	-2.6
Coronary artery bypass graft	-2.4
Transurethral prostate surgery	0.0
Arthroscopy	-3.5
Open prostate surgery	0.6
Other nonsurgical services	
Consultations	3.3
Routine diagnostic radiology	-2.0
Electrocardiograms	-3.2
Echocardiograms	-6.5
CAT scans	-2.4
Colorectal endoscopy	-4.4
Magnetic resonance imaging	1.0
Upper GI endoscopy	-7.3
Angioplasty	-9.0

SOURCE: Medicare Payment Advisory Commission analysis of 1991-1996 Medicare claims, 5 percent sample of beneficiaries.

NOTE: Data are from the first six months of each year.

Reference

Physician Payment Review Commission. *Monitoring Access of Medicare Beneficiaries*, No. 97-3 (Washington DC: 1997).

Chapter 9

Fiscal Year 1999 Update to Payments for Dialysis Facilities

Chapter 9

Fiscal Year 1999 Update to Payments for Dialysis Facilities

Since 1983, Medicare has paid dialysis facilities a fixed, prospective amount for each dialysis treatment provided to beneficiaries with end-stage renal disease (ESRD), regardless of the treatment modality used. The prospective payment, called the composite rate, covers the bundle of services, tests, drugs, and supplies routinely required for dialysis. The base composite rate for hospital-based providers is $126; for independent facilities, it is $122.[1]

The composite rates represent the national median cost per treatment, weighted by the percentage of patients that dialyzed in facilities and at home. The rates were calculated in 1983 based on a sample of cost reports from 1977 through 1979. The rates therefore reflect the mix and costs of inputs and the proportion of patients dialyzing in each site at that time. Unlike Medicare payments to other types of providers, the Congress has not legislated an annual update to the composite rates for dialysis facilities. Aside from a $2 decrease in 1986 and a $1 increase in 1991, the composite rates have remained unchanged since 1983.

The Omnibus Budget Reconciliation Act (OBRA) of 1990 required the Prospective Payment Assessment Commission, and now the Medicare Payment Advisory Commission (MedPAC), to study the costs and payments associated with the provision of dialysis services and recommend to the Congress an annual update to the payment for these services. To develop its recommendation, the Commission estimates the increase in costs to dialysis providers in the coming year, using a framework similar to that used for the update recommendations for hospitals paid under Medicare's prospective payment system (PPS). The update framework includes a market basket index to reflect input price changes, an allowance for the cost of scientific and technological advances (S&TA), and a target for productivity. In addition, the Commission evaluates the adequacy of the base composite rates to which the update factor would apply.

MedPAC uses data from dialysis facility cost reports to develop the market basket index, track productivity trends, and assess the adequacy of the composite rates. Unfortunately, the quality of these data is questionable. Often data are missing or appear to be inaccurate. In addition, during an audit of 1991 cost reports, reported costs were found to be substantially overstated. There have been no audits of dialysis facility cost reports since then.

In recent years, the accuracy of the cost report data filed by free-standing facilities has improved. The Commission continues to be concerned, however, about the accuracy of cost reports filed by hospital-based providers. The costs reported by these providers far exceed those reported by free-standing facilities, although there is no conclusive evidence indicating that hospital-based providers treat sicker patients on an outpatient basis. Hospitals may, however, have difficulty separating the costs for outpatient dialysis services (which are covered by the composite rate) from those for inpatients. Because of these concerns, the Commission has chosen to base its update recommendation for fiscal year 1999 on the cost reports filed by free-standing facilities only.

[1] The labor-related portion of the composite rate is adjusted by each facility's wage index. These indexes reflect the relative differences in labor prices across geographic areas.

On the basis of its analysis, the Commission recommends a 2.7 percent increase in composite rates for fiscal year 1999. An examination of overall developments in the dialysis industry suggests that few new technologies have been introduced that would be expected to drive up the cost of dialysis any further. At the same time, the Commission believes that providers cannot reasonably be expected to achieve productivity gains without compromising the quality of services they furnish. This chapter provides information on the background analysis supporting the Commission's conclusions.

MedPAC's Update Framework

The update framework for dialysis facilities comprises three components. The market basket index measures input price changes. An allowance for scientific and technological advances and a target for productivity improvement account for changes in the use of inputs resulting from the cost-increasing effects of scientific innovation and from gains in efficiency.

Market Basket Index

The market basket index for dialysis facilities is intended to measure changes in the cost of producing a dialysis treatment due to changes in input prices. It is constructed by defining four input categories—capital, labor, other direct costs, and overhead—that reflect the full range of goods and services that dialysis providers purchase. Each component is weighted to represent its cost share, or proportion of total expenses, based on the cost allocations reported by facilities in unaudited 1996 cost reports. The price change for each component is measured by a proxy, derived from the components of the Health Care Financing Administration's (HCFA) input price indexes for PPS hospitals, skilled nursing facilities, and home health agencies.[2] The change in the market basket index is the sum of the weighted price changes for the four cost components. The market basket analysis indicates that prices will rise by 2.7 percent between fiscal years 1998 and 1999.

Productivity Improvements

The productivity adjustment reflects the cost-decreasing effects of using inputs more efficiently or from adopting cost-decreasing technologies. MedPAC examines trends in a number of productivity indicators found on the Medicare Cost Report to assess what productivity gains dialysis facilities can reasonably be expected to attain in the coming fiscal year. These indicators include the number of total treatments per full-time equivalent employee; staff mix measured by the ratio of registered nurses (RNs) to all direct patient care staff (including RNs, licensed practical nurses, nursing assistants, and technicians); the number of in-facility hemodialysis treatments per station; and the average length of a hemodialysis session. Signs of improved productivity include an increase in the number of total treatments per full-time equivalent employee, a lower ratio of RNs to all direct patient care staff, an increase in the number of treatments per station, and a shortening of the average length of a dialysis session.

Table II-9-1

Productivity Indicators for Free-standing Dialysis Facilities, Fiscal Years 1991-1996

Fiscal Year	Total Treatments Per FTE	Total Staff Mix	Treatments Per Station	Length of Hemodialysis (In Hours)
1991	619	0.35	554	4.5
1992	631	0.33	567	4.5
1993	615	0.35	560	4.5
1994	672	0.36	572	4.2
1995	687	0.36	572	4.3
1996	680	0.38	564	4.5

SOURCE: Medicare Payment Advisory Commission analysis of Medicare Cost Report data.

NOTE: FTE = full-time equivalent employee. Staff mix = ratio of registered nurses to direct patient care staff, including registered and licensed practical nurses, nursing assistants, and technicians.

Throughout the 1980s, substantial productivity improvements in the dialysis industry resulted in significant cost reductions. These notable advances in productivity occurred at the same time questions were being raised about the quality of dialysis services (Project HOPE, 1996). In recent years productivity gains have been more modest. In fact, the data suggest that productivity in dialysis facilities may have even declined. Between 1995 and 1996, the number of treatments per full-time equivalent employee fell for independent facilities, as did the number of treatments per hemodialysis station (see Table II-9-1). At the same time, the length of a dialysis session rose, and providers appeared to be employing a richer mix of staff. Since some of the early productivity gains may have been at the expense of quality of care and productivity is now declining, MedPAC believes that providers should not be expected to improve productivity in fiscal year 1999.

Scientific and Technological Advances

The S&TA allowance is intended to recognize the costs associated with facilities' adoption of new technologies that improve the quality of patient care. It is an estimate of the operating and capital costs of new and emerging dialysis-related technologies and the expected increase in their use for the coming fiscal year.

[2] These proxies were used because proxies specific to the dialysis industry are not available. Even if they were available, using dialysis-specific price proxies may not be appropriate. Given the sizable amount of vertical integration in the dialysis industry (that is, firms that own facilities often own laboratories that service the facilities or suppliers of dialysis items), changes in a dialysis-specific price index may be influenced by corporate pricing strategies rather than by market forces.

The S&TA estimate is based on information and opinions from medical and industry experts. However, the unpredictability of patient and physician receptiveness to change, varying industry and market conditions (such as the entry of additional suppliers), patent and proprietary issues, revision of scientific opinion based on additional outcome studies, and regional variability in treatment patterns all affect the accuracy of the S&TA.

For the fiscal year 1999 update, a qualitative approach similar to the method used to determine the S&TA estimate in the PPS hospital update framework was used. On the basis of this review and given the uncertainty of the cost estimates, MedPAC believes that the S&TA for fiscal year 1999 should be 0.0 percent.

The Commission's study began by reviewing the technologies that were included in prior years' analyses (Abt 1996).[1] Using the technologies identified for the fiscal year 1998 estimate, it assessed broad industry trends in the use and cost of new technologies based on a review of trade literature and informal discussions with industry representatives.

This assessment suggests that the emerging technologies evaluated for the fiscal year 1998 S&TA allowance are continuing to diffuse, but may not add measurably to costs. Among these are newer generation hemodialysis machines, which allow for exact ultrafiltration control and variable sodium concentrations, can mix bicarbonate dialysate on-line, and can perform simple blood tests for monitoring. Computer information systems, such as those used to create treatment records and to analyze trends in chemical balances, are being used more widely. Similarly, kinetic models, which are used to predict and monitor the effect of different dialysis prescriptions and require blood tests or used dialysate samples, continue to diffuse. New cycling machines for continuous cycling peritoneal dialysis, as well as blood volume/hematocrit monitors remain important technologies for dialysis facilities. Another relatively new technology, the synthetic (biocompatible) dialyzer, may not meet MedPAC's requirements for inclusion in the S&TA because of questions regarding its quality-enhancing effect. Two newer technologies that were identified in the assessment, single-exchange cyclers for continuous ambulatory peritoneal dialysis (CAPD) and home hemodialysis machines, do not yet meet the diffusion criteria for inclusion in the fiscal year 1999 S&TA, but may increase dialysis costs in future years.

Dialysis Facility Costs and Payments

MedPAC also considers other factors, including the adequacy of the composite rates, in making its update recommendations. Historically, Medicare's payments to free-standing providers for dialysis services have been considerably above reported costs. This differential appears to have narrowed over time. Because it has been many years since these facilities' cost reports were audited, however, it is difficult to assess the accuracy of cost report information.

Reported Costs and Payments for Fiscal Year 1996

In its analysis of dialysis providers' costs, payments, and overall financial performance for fiscal year 1996, MedPAC calculated costs for in-facility hemodialysis and CAPD (the two most common treatment modalities) using unaudited Medicare Cost Report data. Payments were derived using wage-adjusted base composite rates for each provider. Aggregate payment-to-cost ratios for each treatment modality and for combined modalities also were created to estimate whether Medicare payments cover the costs of furnishing dialysis services to beneficiaries. However, these estimates provide an incomplete picture of the costs incurred and payments received by dialysis facilities, because these facilities provide other Part B services to beneficiaries that are not included in the composite rate. Further, the payments used in this analysis do not include additional payments that facilities received through the exceptions process.

Data from 1996 cost reports indicate that Medicare payments to free-standing facilities for dialysis services covered reported Medicare costs alone. The Medicare payment-to-cost ratio for these providers, calculated with unaudited cost report data, fell from 1.03 in 1995 to 1.00 in 1996 (see Table II-9-2).

[1] In the past, a technology-specific approach to estimate the S&TA was used. This analysis had three steps. First, specific quality-enhancing technologies were selected using the following criteria: (1) it was considered safe and effective, as indicated by approval from the Food and Drug Administration or other relevant agency, or, as appropriate, through general acceptance by the scientific community, (2) it was expected to be at least 5 percent diffused but not more than 75 percent diffused in the population of beneficiaries who were candidates for the treatment in that fiscal year; and (3) it was projected to have a substantial cost-increasing effect on the costs of services covered by Medicare's composite rate. Second, the facility-based and per treatment costs associated with adopting each technology were estimated. Finally, the number of patients eligible to use the technology and the diffusion rate for the upcoming year were estimated. The expected incremental industrywide cost of all the selected technologies were summed and then distributed over the expected total payments for that year to obtain the incremental cost increase.

Table II-9-2

Payment-to-Cost Ratios for Free-standing Dialysis Facilities, for All Dialysis Treatments, 1991-1996

Facility Type	1991	1992	1993	1994	1995	1996
All	1.13	1.12	1.11	1.04	1.03	1.00
Urban	1.13	1.12	1.12	1.05	1.03	1.00
Rural	1.12	1.12	1.08	1.01	1.02	0.97
Not-for-profit	1.03	1.02	1.05	1.03	0.97	0.95
Proprietary	1.14	1.14	1.12	1.04	1.04	1.01
Small	1.04	1.03	1.00	0.95	0.93	0.89
Medium	1.11	1.10	1.09	1.02	1.01	0.99
Large	1.17	1.16	1.16	1.08	1.06	1.03

SOURCE: Medicare Payment Advisory Commission analysis of Medicare Cost Report data.

NOTE: Includes both hemodialysis and peritoneal dialysis.

There was some variation in reported costs across facility types. Proprietary facilities recorded capital costs that were 20 percent higher than not-for-profit facilities. However, not-for-profits had other direct costs that were 18 percent higher. Their wage-adjusted labor costs were 14 percent higher than those for proprietary facilities, in part because not-for-profits employed a greater proportion of registered nurses. As a result, dialysis payments to not-for-profits covered 95 percent of reported costs, compared to 101 percent of those for proprietary facilities. The data also indicated the presence of economies of scale. Small facilities—those providing the fewest treatments—recorded capital costs that were 46 percent higher than those for large facilities and adjusted labor costs that were 16 percent higher. As a result, payments covered only 89 percent of their reported total costs.

About half of free-standing facilities (51 percent) reported losses. Nevertheless, many providers continued to perform well: More than 40 percent had payment-to-cost ratios above 1.05. The 10 percent of facilities with the highest profits per treatment had an aggregate payment-to-cost ratio of 1.30.

Estimated Costs and Payments for Fiscal Year 1998

Costs for fiscal year 1998 were estimated by adjusting free-standing facilities' reported 1996 costs to account for inflation between 1996 and 1998. Using the market basket index, costs were increased by 4.5 percent. This results in an estimated cost per dialysis treatment for 1998 of $131.51 (see Table II-9-3). For 1998, MedPAC estimates that composite rate payments to free-standing providers will be 4 percent below unaudited costs.

Audited cost data, however, would probably indicate more favorable financial performance. During an audit of 1991 cost reports, HCFA found that some costs were improperly recorded, allocated, or were not allowable under Medicare rules. Removal of these costs reduced free-standing facilities' aggregate reported costs by 12.2 percent. The National Renal Administrators Association (NRAA), however, has argued that Medicare's definition of allowable costs understates the actual costs of providing dialysis. Specifically, the NRAA maintains that the salary limits for the medical director and the facility administrator, established in 1984, are too low. The Commission estimated that a partial audit adjustment to allow higher salaries would reduce reported costs by 10.5 percent. But there is reason to believe that free-standing facilities' cost reports have become more accurate since 1991. HCFA has employed a number of mechanisms to improve the quality of cost report data (including the use of a new cost report for independent facilities). At the same time, the NRAA has been working with its members to help ensure that cost reports are filed correctly.

The true costs of providing dialysis services are thus not known with any certainty. The Balanced Budget Act of 1997 requires HCFA to audit dialysis facility cost reports. Until this audit is conducted, it is difficult to determine an appropriate audit adjustment, although it is probably less than 10.5 percent. Nevertheless, it is likely that total payments to free-standing facilities for dialysis services remain above costs.

Table II-9-3

Estimated Costs and Payment-to-Cost Ratios for Free-standing Dialysis Facilities With and Without Audit Adjustments, Fiscal Year 1998

Adjustment	Cost Per Treatment	Payment-to-Cost Ratio
Without audit	$131.51	0.96
With partial audit	117.70	1.07
With full audit	115.47	1.09

SOURCE: Medicare Payment Advisory Commission analysis of Medicare Cost Report data.

NOTE: The partial audit adjustment is 10.5 percent. The full audit adjustment is 12.2 percent.

References

Abt Associates Inc. *The Incremental Impact of Scientific and Technological Advances on Cost Increases in Dialysis Facilities* (FY 1997). ProPAC Extramural Technical Report E-96-01, January 1996.

Project HOPE, *Quality of Dialysis in the United States*, ProPAC Extramural Technical Report E-96-03, June 1996.

Chapter 10

Program of All-Inclusive Care for the Elderly

Chapter 10

Program of All-Inclusive Care for the Elderly

The Program of All-Inclusive Care for the Elderly (PACE) is designed to keep frail elders out of nursing homes and to reduce their use of inpatient care by providing primary, preventive, and institutional care. Enrollees must be eligible for nursing-home placement based on state Medicaid criteria. Most participants are covered by Medicare and Medicaid, which make capitation payments to PACE sites. The program currently enrolls 3,600 elders at 12 sites nationwide.

The Balanced Budget Act of 1997 (BBA) converted PACE from a demonstration program with nonprofit sites only to a permanent one under Medicare and an option under Medicaid. The Act also authorized a new demonstration of for-profit sponsors of PACE sites. The BBA requires the Medicare Payment Advisory Commission (MedPAC) to make annual recommendations in its March report on Medicare and Medicaid payment methods and amounts. The Commission also must comment on the appropriateness of allowing private, for-profit entities to participate in PACE.

Information on Medicare payments to PACE sites will soon be available. The Health Care Financing Administration (HCFA) has two studies under way. The first, the final part of the overall HCFA evaluation of the PACE demonstration, is due in early 1998. It will focus on the program's cost effectiveness for Medicare. The second, due later in 1998, evaluates the Medicare risk adjuster used to set PACE capitation amounts.

Other activities will provide more information on the permanent program and the new demonstration. Regulations for the permanent PACE program are expected in mid-1998. The BBA requires the Secretary of Health and Human Services to study the effect of converting PACE to an ongoing program and to report on several specific questions regarding the demonstration of for-profit sites. Among these are whether for-profit entities have enrollment too low to support evaluation, whether their enrollees are less frail than those enrolled with nonprofit PACE providers, and whether there are any differences in access to or quality of care for their enrollees. The report is due by August 2001.

While MedPAC has a mandate to make recommendations on PACE, it seems prudent to wait until HCFA's study of PACE's cost effectiveness to Medicare is complete before doing so. As a first step toward fulfilling its mandate, the Commission has prepared this chapter with background information on the program and discussion of several issues that must be taken into account when considering PACE. The chapter first describes the PACE program's organization and sponsors, benefits, eligibility, enrollment, and Medicare and Medicaid payment methods. It concludes with an overview of important policy issues, primarily focusing on payment.

PACE Overview

PACE replicates the delivery system and financing model that On Lok Senior Health Services, located in San Francisco's Chinatown, pioneered for its clients. On Lok began in 1971 and served as the model for HCFA's PACE replication demonstration. That demonstration began in 1986 with grants from the Robert Wood Johnson and John A. Hartford Foundations and with congressional authorization of Medicare and Medicaid demonstration waivers. Later legislation reauthorized the demonstration and allowed up to 15 sites to participate; 12 now participate in nine states.

Table II-10-1

PACE Sites, Ownership, and Enrollment, 1997

Site Name	Location	Ownership	Enrollment
Bienvivir Senior Health Services	El Paso, TX	Free-standing, community-based	274
Center for Elders Independence	Oakland, CA	Free-standing, community-based	140
Center for Senior Independence	Detroit, MI	Hospital/health care system	90
Community Care for the Elderly	Milwaukee, WI	Free-standing, community-based	354
Comprehensive Care Management	Bronx, NY	Nursing home	372
Elder Service Plan	East Boston, MA	Community health center	320
Independent Living for Seniors	Rochester, NY	Hospital	337
On Lok Senior Health Services	San Francisco, CA	Free-standing, community-based	634
Palmetto SeniorCare	Columbia, SC	Public hospital and state health department	332
Providence ElderPlace	Portland, OR	Hospital/health care system	380
Sutter SeniorCare	Sacramento, CA	Free-standing, community-based	160
Total Longterm Care	Denver, CO	Free-standing, community-based	220

SOURCE: National PACE Association.

NOTE: PACE = Program of All-Inclusive Care for the Elderly.

The BBA made PACE a permanent Medicare program, which will be implemented through regulations in 1998. Under Medicare, up to 40 sites can be approved in 1998, and up to 20 new ones can enter annually thereafter. The program will be modeled closely on the demonstration. The BBA also provided for PACE to be offered under Medicaid, as a state option. Both Medicare and Medicaid payments must be less than projected for a hypothetically comparable population not enrolled in PACE.

For the new demonstration activity, up to 10 for-profit entities will be allowed to participate. Their performance in terms of cost, access, and quality will be compared with that of public and nonprofit entities. A report on PACE from the Secretary is due to Congress by August 2001.

Organization and Participating Sites

PACE sites are managed-care plans. The plans receive capitated payments, and enrollees must use the plans' provider networks. The features of the PACE model that distinguish it from most managed-care plans, though, are that all enrollees are frail and that service delivery and care coordination are centered around adult day health centers. Primary care physicians deliver care at the centers and arrange for hospital and nursing-home placement when needed.

A multidisciplinary team of physicians, nurses, social workers, physical and occupational therapists, and others assess participants' needs and develop treatment plans together with patients and their families. This same team also directly provides much of the care participants receive, although care needs may be fulfilled by other employees or by contractors as well. Frequent attendance at the centers is usually required so that team members can assess participants and families are relieved of some of the care burden. Programs also typically provide meals in the centers.

A total of 12 Medicare PACE sites, including On Lok, get Medicare and Medicaid capitation payments. Prior to the BBA, the law provided that 15, at most, could receive Medicare capitation payments. Most sites were either started and owned by hospitals or were organized as free-standing community organizations (see Table II-10-1). Regardless, all PACE sites have community ties and have been developed by groups that are strongly committed to the program's approach to managing care for nursing-home-certifiable elders.

No published studies have documented any differences in the management and operation of the different PACE sites by sponsorship type. Further, the types of sponsors that have been in the demonstration have been fairly uniform; for example, to date, no sites have been started by managed-care plans. Whether some types of entities are more successful sponsors of PACE sites than others (either in terms of generating greater enrollment, providing higher-quality care, or stronger financial management) is thus unknown.

The sites have relatively small enrollments, with On Lok's being the largest at 634. Sites may have multiple centers. Generally, an individual PACE center serves about 100 to 120 enrollees, with daily attendance of 50 to 70 (Kunz and Shannon 1996).

Another 14 sites are organized on the PACE model and receive Medicaid capitation payments but are not considered PACE since they are not qualified to receive Medicare capitation payments

Table II-10-2

Medicaid-Only PACE Sites, Location, and Enrollment, 1997

Site Name	Location	Enrollment
AltaMed Senior Buena Care	Los Angeles, CA	82
Chicago REACH	Chicago, IL	82
Elder Care Options	Madison, WI	84
Elder Service Plan at Fallon	Worcester, MA	89
Elder Service Plan of Cambridge Hospital	Cambridge, MA	56
Elder Service Plan of the North Shore	Lynn, MA	134
Elder Service Plan of Harbor Health Services	Dorcester, MA	50
Elder Service Plan of Mutual Health Care	Dorcester, MA	67
PACE Hawaii at Malulani	Honolulu, HI	54
Providence ElderPlace	Seattle, WA	61
Hopkins Elder Plus	Baltimore, MD	61
Sentara Senior Community Care	Virginia Beach, VA	41
Eddy SeniorCare	Schenectady, NY	19
TriHealth Senior Link	Cincinnati, OH	7

SOURCE: National PACE Association

NOTE: PACE = Program of All-Inclusive Care for the Elderly

see Table II-10-2). These Medicaid-only sites operate under Medicaid prepaid health plan authority and, as with PACE, are responsible for providing the majority of institutional and community-based long-term care services as well as primary medical care. In addition, these programs attempt to coordinate the delivery of other Medicaid- and Medicare-covered services.

The Medicaid-only sites differ from PACE in that Medicare beneficiaries enrolled for purposes of Medicaid can choose whether they wish to receive Medicare-covered services from the Medicaid-only site or other providers. Further, all Medicare services for beneficiaries enrolled in these Medicaid-only sites are paid on a fee-for-service basis. Some Medicaid-only sites are likely to join the permanent PACE program, since they are similar in some ways to qualified PACE sites.

The Robert Wood Johnson Foundation has funded the National PACE Association to develop standards of care and an accreditation mechanism for PACE sites. The association completed this task in late 1997. It has requested additional funding to implement a 15-month pilot study of the accreditation process. A final accreditation process should be ready for implementation in 1999 (van Reenen 1997).

Benefits

PACE sites cover all medical benefits offered by Medicaid (which vary by state) and by Medicare.[3] They also cover services typically available through Medicaid home and community-based care programs, such as social services, nutrition counseling, extended personal care, home-delivered meals, transportation, and respite care. Sites have the flexibility to cover other items and services to avoid more costly medical care. PACE sites cannot charge copayments or require deductibles.

PACE sites are at full risk for all enrollees' use of health care services covered under their contract. Enrollees must receive all of their services from PACE staff or contracted providers. Although the program is designed to keep participants living in the community, a site may not disenroll anyone who enters a nursing home.

Benefits will likely mirror those offered by the current sites and will at a minimum include all Medicare benefits without cost sharing. The BBA also specifies that if a state Medicaid program elects to offer PACE, sites in that state must cover all Medicaid benefits without limiting the amount, duration, and scope.[4] Unlike health plans that participate in the Medicare risk program (or that will participate in Medicare+Choice), PACE sites do not have to file an adjusted community rate proposal to demonstrate that any payments above costs for basic Medicare benefits are spent on extra benefits.

Eligibility and Enrollee Characteristics

To be eligible to enroll in PACE, individuals must be at least 55, live in the site's service area, and meet state Medicaid nursing-home eligibility criteria. Since states pay for a large portion of nursing-home care under their Medicaid programs, they have developed screening criteria to ensure that nursing-home patients truly need the level of care that nursing homes furnish. States vary widely in the criteria, thresholds, and processes they use to determine nursing-home eligibility. In addition, the PACE multidisciplinary team makes determinations of prospective participants' suitability for PACE; these determinations vary by site.

Differences in both state eligibility determinations and sites' suitability assessments may contribute to important variations in the characteristics of PACE enrollees at the 12 sites. The potential for across-site differences in participant characteristics raises questions about comparability of eligibility criteria and whether it is appropriate for Medicare to use a single payment adjuster if resource needs of the participants vary.

[3] Now that the program is permanent, the Secretary will issue regulations defining mandatory PACE benefits. In the demonstration, covered benefits were listed in the PACE protocol, a document detailing all the program requirements for sites.

[4] These possibly will include optional Medicaid benefits (those that states can choose whether or not to cover) but this will be specified in regulation.

State Nursing-Home Eligibility Criteria

Reviewing the criteria and processes states use in determining nursing-home eligibility illustrates the potential for variation in PACE enrollee characteristics. State criteria generally focus on:

- the medical necessity for such care;
- medical/functional capacity; or
- a more comprehensive set of factors, with each category building on the components of the previous level (Snow 1995).[3]

Medical necessity assessments evaluate the beneficiary's need for the services of a health professional, such as a registered nurse, licensed practical nurse, or licensed therapist. Medical/functional assessments review the beneficiary's medical requirements as well as functional capacity to perform activities of daily living (ADLs). Such assessments also evaluate possible cognitive impairment or other behavioral factors that could affect functional ability. Comprehensive assessments review the same factors as the other two types of assessments, plus various social factors like the availability of housing in the community or the presence of a caregiver.

Of the nine states in which the current PACE sites operate, five use assessment tools that fall into the medical/functional assessment category. The rest use tools that fall into the comprehensive assessment category. Texas, for example, uses a medical/functional assessment tool. The medical portion of the assessment evaluates the person's need for medical/nursing services on a regular basis, as ordered and supervised by a physician. Among other things, the functional portion of the assessment looks at whether the person has a medical condition with a related impairment that limits the ability for self-care of the condition and requires a nurse's supervision or intervention only available in an institution (O'Keeffe 1996).[4] Massachusetts, which also uses a medical/functional assessment tool, considers a person's need for nursing and rehabilitation services and for assistance with ADLs.

Colorado uses a comprehensive assessment tool to determine eligibility for nursing-home care, looking at emotional and behavioral factors, as well as medical and functional ones. The state scores a person's functional capacity, including the ability to perform ADLs and instrumental activities of daily living (IADLs), mobility, cognitive and sensory impairment, behavioral problems, communication, and bowel and bladder incontinence. Hawaii also uses a comprehensive assessment tool, evaluating a person's health and psychosocial needs.

States also vary in the threshold that a beneficiary must meet to be considered nursing-home eligible under the different criteria. Most states require that, at the very least, a beneficiary need care or supervision from a registered or licensed practical nurse on a regular basis, though definitions of "regular basis" also differ (Snow 1995). Some states require that a beneficiary need care around-the-clock or for a certain number of hours. Others use numerical scales or point systems based on care needs in determining whether a beneficiary is eligible for nursing-home care. Other states require that beneficiaries have a number of ADL dependencies, possibly in combination with specific needs for skilled nursing care or therapy.

Still other states employ subjective measures, relying on an evaluator to assess the most appropriate care setting for the beneficiary. Massachusetts's assessment, for example, uses a combination of thresholds. As described above, that state relies on the medical/functional assessment criteria of nursing, rehabilitation service needs, and ADL capabilities. Within such categories, Massachusetts requires that a person need one of 19 nursing and rehabilitation services at least three times weekly, plus help with two ADLs. Hawaii, which is in the comprehensive assessment category, applies as a threshold requirement the need for care and supervision 24 hours a day, at either a skilled or intermediate level. Colorado uses a comprehensive assessment; to meet the eligibility threshold for nursing-home care, beneficiaries must need services to address their impairments at least five days a week.

Finally, states conduct assessments in various ways, relying on different entities or individuals to perform assessments and make eligibility determinations (Snow 1995). Regardless of the approach, most states retain the authority to override the initial determination. In some states, Medicaid agency staff perform the assessment themselves. Other states rely on the nursing home to do the patient assessment, though the facility rarely determines eligibility.

[3] These categories of assessment criteria were defined in a 1995 state nursing home eligibility survey, which represents the most recent review of states' nursing-home eligibility policies.

[4] Unless otherwise indicated, information on the specific aspects of states' assessment tools comes from a 1996 survey of state eligibility criteria for Medicaid home and community-based services waivers conducted by the American Association of Retired Persons (O'Keeffe 1996). According to the survey report, the states whose nursing-home eligibility criteria are described in this and the following sections rely on the same assessment tool for such waiver programs as that used to determine Medicaid eligibility for nursing-home care.

Yet other states contract with outside agencies, such as case management organizations, the state's office of aging, or peer review organizations, to conduct the assessment and make the eligibility determination. Massachusetts, for instance, contracts with home care corporations to conduct the eligibility assessment. Registered nurses within these organizations make the eligibility determination as agents of the state.[5] For the Medicaid-only PACE site in Illinois, assessments are performed by a discharge planner, social worker, or case manager with a hospital or nursing facility under contract with the state (Snow 1995).

During the demonstration, states did not reassess PACE participants to see if they continued to meet state nursing-home eligibility criteria after they enrolled in PACE. The Congress raised concerns that participants could improve to the point that they might no longer meet the nursing-home certification requirements (van Reenen 1997). To address this issue, the BBA requires PACE participants to be reevaluated annually after they have enrolled. Subject to regulation, if a state evaluates a participant and finds no reasonable expectation of improvement or significant change in the individual's condition, HCFA can waive the requirement for annual reevaluation. Further, even if participants fail to meet the state criteria after being assessed, they do not need to disenroll if HCFA determines that their condition would decline in the next six months to the point where those participants would again meet the criteria.

The variation in state nursing-home certification criteria means that PACE enrollee characteristics could differ across states.[6] This could affect the evaluations of PACE cost effectiveness. It will be more expensive to provide care for PACE participants in states with exclusive, narrowly drawn criteria than in states with less restrictive criteria. Further, the possibility of meaningful differences in patient populations suggests that a single risk-adjustment factor is inappropriate for Medicare's PACE payment (see below).

Sites' Evaluation of Applicants

In addition to meeting state nursing-home eligibility criteria, each applicant is evaluated by the site to determine appropriateness for PACE. PACE sites may choose not to enroll anyone whose health and safety would be jeopardized by staying at home (National PACE Association 1995). Sites typically schedule multiple visits with prospective candidates for candidates to become familiar with the program and so that the multidisciplinary team can judge their suitability for PACE. Factors the team may consider in making this judgment include sociability, mental status, cognitive sufficiency, and availability of support from family members (Branch et al. 1995). Each site uses a different set of factors in making these determinations, likely contributing to across-site variation in enrollee characteristics.

Participant Characteristics and Service Use

Because of the requirement that participants be eligible for nursing-home care, they appear on average to be very frail. In 1996, the average PACE enrollee was an 80-year-old widow with 8.1 medical conditions. The five most common medical conditions for PACE participants were diseases of the eye, hypertension, arthritis, dementia, and depression/anxiety (National PACE Association 1997).

Studies of participant health care status have found that all of the PACE population had some functional dependencies. Participants had, on average, 2.7 dependencies in performing ADLs (Branch et al. 1995). On average, enrollees had 7.5 IADL dependeneies out of a possible 8 (National PACE Association 1996). In 1995, 55 percent of participants had bladder incontinence, and 42 percent were diagnosed with dementia. A large share of enrollees live with family members, but about 40 percent live alone in the community (Eng et al. 1997).

Although all PACE participants are frail, enrollee mix differs across the PACE sites. For example, 95 percent of Comprehensive Care Management's participants were dependent in at least one ADL, compared with 79 percent of those in Community Care for the Elderly. Similarly, 81 percent of Total Longterm Care's participants had mental disorders as opposed to 52 percent of Elder Service Plan's (Branch et al. 1995).

Sites also have quite different racial and ethnic composition. For example, 90 percent of On Lok's participants are Asian, 90 percent of Palmetto Senior Care's participants are African-American, and three sites have a predominantly white group (Branch et al. 1995).

PACE is intended to improve upon the management of participants' health care, relative to fee for service, by substituting primary and preventive services for institutional care, providing more comprehensive services, and offering adult day health care that allows regular contact between the multidisciplinary team and

[5] Massachusetts thus has no mechanism for appealing the determination, since the registered nurses are acting as the state when making the eligibility decision.

[6] The BBA requires that the Secretary or state agencies find that PACE participants have the same health status level as those currently enrolled in the PACE demonstration sites. Until regulations are promulgated, it is unclear whether this requirement might result in more uniform eligibility criteria in the permanent program than under the demonstration.

Table II-10-3

PACE Monthly Capitation Rates, 1997

PACE Site	Rate		
	Medicare	Medicaid	Total
Portland, OR	$ 925	$1,704	$2,629
Columbia, SC	842	1,912	2,754
Denver, CO	1,204	1,587	2,791
Sacramento, CA	1,200	1,865	3,064
El Paso, TX	1,049	2,029	3,078
Milwaukee, WI	1,039	2,132	3,171
San Francisco, CA	1,257	2,213	3,470
Detroit, MI	1,525	2,047	3,572
Oakland, CA	1,338	2,245	3,582
Boston, MA	1,523	2,103	3,626
Rochester, NY	985	2,928	3,912
Bronx, NY	1,741	4,124/2,550*	5,865/4,291*

SOURCE: National PACE Association, 1997

NOTE: PACE = Program of All-Inclusive Care for the Elderly.

* Medicaid pays two different rates based on whether the enrollee would qualify for intermediate or skilled level nursing facility care

participants and reduces enrollees' isolation. This model of care is supposed to produce better outcomes. To date, however, the model has not been rigorously evaluated. In particular, the HCFA contractor's 1996 evaluation of PACE participant outcomes (the first part of HCFA's evaluation of the PACE demonstration) suffered from poor control group selection (Burstein et al. 1996).

Some basic statistics suggest that the program is meeting its goal of reduced hospitalization. In 1996, PACE enrollees had 2,047 inpatient hospital days per thousand compared with 2,080 in the Medicare fee-for-service population. PACE enrollees also tended to have shorter inpatient hospital stays than the average for fee-for-service beneficiaries.

These hospitalization statistics vary significantly by site, however. Participants in Palmetto Senior Care in South Carolina had 600 hospital days per thousand, while those enrolled in Comprehensive Care Management in the Bronx had 4,680 hospital days per thousand (National PACE Association 1997). Little information is available to account for this variation, although Palmetto Senior Care has the highest adult day care center attendance rate (15.1 days per month) and Comprehensive Care Management has the lowest (7.0 days per month) (National PACE Association 1997). Differences in geographic practice patterns also likely play a role.

Payment

For those dually eligible for Medicare and Medicaid, capitation payments are made separately by each program (see Table II-10-3).[7] Medicare capitation payment rates range from $842 to $1,741 per month. Those who are not eligible for Medicaid coverage make private monthly payments for the services not covered by Medicare, usually paying the same as the Medicaid capitation amount.

When a site enrolls participants with Medicaid coverage only (for example, those younger than 65 or those who do not qualify for Medicare Part A), it receives just the Medicaid capitation payment. Some Medicaid-only eligibles must contribute a part of this amount, depending on their type of Medicaid eligibility. Regardless of coverage, though, all PACE enrollees receive the same benefit package.

Medicare Capitation Payment

Medicare s PACE capitation payment is the product of the base payment (as determined for the county in which a PACE enrollee lives under the risk-contracting and future Medicare+Choice programs) and the PACE-specific adjuster. (See Volume I, Chapter 2 for a description of risk contracting and Medicare+Choice capitation rates.) The PACE adjuster is 2.39, and does not vary by enrollee age, sex, or other characteristics. According to HCFA staff, this factor was developed from various studies of frail elderly populations when the On Lok demonstration was started. Medicare's capitation rate for PACE participants is generally higher than the one it pays to risk plans for beneficiaries who live in nursing homes and for the dual-eligible population not in nursing homes, although lower than several of the rates for the oldest beneficiaries.

Under the permanent PACE program, HCFA plans to continue to use the 2.39 adjuster, but may refine this amount in future years. Any decision to change the PACE adjuster will likely reflect findings from ongoing research efforts.

The appropriateness of Medicare's PACE adjuster has been addressed in several studies. In general, researchers have attempted to compare spending patterns of the nursing- home-certifiable population with those of the average Medicare beneficiary, although individuals in the samples were designated as nursing-home-certifiable using a predictive model and were not clinically assessed. A 1990 study found that the best estimate of the relative spending level for the nursing-home-certifiable elderly was 2.42 times that of the average Medicare beneficiary (Gruenberg et al. 1990). There was considerable variation around this estimate. Certain individuals—those with recent hospitalizations and those classified as severely disabled—had much higher costs than

[7] Under the demonstration, sites were initially paid the Medicare capitation amounts, but Medicare would share part of any cost overruns with the site, usually over the first three years of operation. Once sites were judged to be solvent, Medicare would no longer make additional payments for costs exceeding payments. Risk sharing with Medicare is not a feature of the permanent program.

other groups of nursing-home-certifiable elderly. Spending for the least costly group averaged 1.66 times the amount for the average beneficiary, while spending for the most costly group was 4.0 times higher than average. The researchers also found that the condition of some nursing-home-certifiable beneficiaries improved over time. During a four-year period, their annual costs dropped by about one-third from the first year.

The most recent study had similar findings to the earlier ones: that a population with some of the same characteristics as PACE participants incurred 2.6 times more on Medicare services than the average beneficiary. The 1997 study used the same basic methodology as the 1990 one, but is based on data from the 1991 to 1994 Medicare Current Beneficiary Survey (Gruenberg and Kaganova 1997). The latest study was somewhat more restricted in its ability to match characteristics of PACE participants to those who responded to the survey, however.

None of these studies evaluated whether actual PACE enrollees might be less inclined to use health care services than the average nursing-home-eligible Medicare beneficiary living in the community. If there is favorable selection to PACE sites, a comparison of the spending patterns of fee-for-service enrollees would overstate any savings to Medicare.

Medicaid Capitation Amounts

Each state with PACE sites has developed a capitation rate-setting process. These processes vary, but there are some similarities. Most states first identify a population hypothetically similar to PACE enrollees (like nursing-home residents or participants in home and community-based care programs) and calculate that group's average per capita fee-for-service spending. This amount is then discounted to reflect anticipated savings from better coordination of care and timely provision of primary care services (Iverson 1993). The 1997 Medicaid capitation amounts varied from $1,587 in Colorado to $4,124 for the most expensive category of New York PACE enrollee.

States generally have not developed sophisticated risk adjusters for their capitation rates, but instead try to make sure that they have selected the most appropriate reference group from which to develop the basic capitation payment. Some states (California and Wisconsin) used age and sex adjusters in the past. Wisconsin also periodically adjusts its payments to reflect the level of nursing-home care PACE enrollees would need if they were in a nursing home. New York makes a similar determination, but only when an enrollee first enters the PACE site.

Enrollment and Disenrollment

Individuals meeting eligibility criteria can join PACE at any time and disenroll at the end of any month. PACE enrollees will not be required to adhere to the enrollment and disenrollment rules of Medicare+Choice plans.[8] New enrollees enter the program at the rate of 6.1 per site per month, representing annual growth of 18 percent (this is from a very small base) (Eng et al. 1997). The average disenrollment rate (for reasons other than death) is 0.9 persons per month. Common reasons for disenrollment are to return to a physician seen before the enrollee joined PACE or the desire for more home health services instead of care in the PACE center (Eng et al. 1997). In 1996, 11.4 percent of PACE enrollees were disenrolled because of death (National PACE Association 1997).

In the permanent program, sites can disenroll participants if they do not pay premiums on time or engage in disruptive or threatening behavior. Sites cannot disenroll participants for failing to comply with medical advice or not appearing for appointments if the behavior is related to a mental or physical condition. Until regulations are promulgated, however, it is unclear whether individuals can be involuntarily disenrolled for other reasons.

The program's low enrollment of 3,600 raises questions about whether certain features of PACE could be modified to make it more attractive. The PACE program is targeted at a narrowly defined group of elders—those who meet state eligibility criteria for nursing-home level of care. This may represent about 5 percent to 8 percent of the Medicare population. The current PACE enrollment represents only a small fraction of those who might meet these criteria, and most PACE sites have found that planned growth is more desirable than rapid and continuing new enrollments. Sites have not reached the enrollment levels they originally expected.

There are several possible reasons for low enrollment. First, sites may lack sufficient funds for advertising so that referrals are generated only from the community and other providers. Second, even those aware of the program may find its features unattractive. For example, some people may not want to attend the adult day care center (Branch et al. 1995). Others may be concerned about the requirement to receive all care from the site's providers. A further issue is that PACE has not attracted many middle-class enrollees. Those without Medicaid coverage must pay the Medicaid amount out of pocket in the form of a monthly premium. This may discourage middle-class beneficiaries from enrolling.

[8] In 2002, beneficiaries in Medicare+Choice plans will generally enroll for a year at a time, with limited opportunities to disenroll from their plans.

The extension of PACE from a limited demonstration to a permanent program with more sites may make PACE available in more markets. The very nature of the PACE site, however, may constrain overall enrollments. Because the program is based around an adult day health center that serves only a small population, the capital investment per enrollee is substantial. Further, a site with 120 to 150 enrollees needs between 60 and 80 staff, including physicians, nurse practitioners, registered nurses, therapists, and other workers (Eng et al. 1997). Ability to hire and retain trained staff (particularly geriatricians) may also be an issue in some areas. The lack of appropriate housing may also contribute to slow enrollment.[9]

One consideration related to enrollment and the attractiveness of PACE to the target population is the relative generosity of state Medicaid and other local social welfare programs. In states that have opted for less comprehensive Medicaid coverage, for example, the comprehensive set of services available through PACE would make this program very attractive to potential enrollees, and higher PACE enrollment would be expected. By contrast, in states where it is relatively easy for people to get supportive services at little cost and where Medicaid benefits are comprehensive, PACE will be somewhat less attractive, with lower enrollment the likely result.

Key Issues

As PACE moves from a demonstration to a permanent program, a number of issues should be considered. First, it is unknown what type of entity is the most successful sponsor for a PACE site or on what basis performance should be evaluated. This issue will be a factor in the decision about whether it is appropriate for for-profit entities to sponsor PACE sites. Another issue to consider is the effect of variation in state nursing-home eligibility standards on PACE case mix. This issue has implications both for consistency of enrollment criteria for a national program and for payment equity: If case mix varies systematically by state eligibility criteria, it is probably inappropriate to pay all sites using the same adjuster. Still another issue is whether low enrollments may reflect aspects of the PACE model that are unattractive to the target population or whether sites' marketing efforts could be better targeted.

With respect to Medicare and Medicaid payments, there are several critical questions. One is the appropriate base payment rate. Medicare uses the same basic payment rate for PACE as was developed for the Medicare risk-contracting program. This capitation rate was set at 95 percent of the county fee-for-service spending amount, but the payment method has recently been changed so that the amount no longer reflects local spending patterns (see Volume I, Chapter 2). Each state Medicaid program, by contrast, continues to calculate its payments for PACE based specifically on a reference group in the fee-for-service population in that state. Both programs may wish to set base payment rates that reflect program goals, for example, budget savings or equal payments between fee-for-service and capitation programs.

A second, related question is whether there might be favorable (or adverse) selection among the nursing-home-certifiable population into the PACE program and if so, what type of risk adjustment method is most appropriate. This is relevant for payment because payments ideally should reflect the resources that would be needed by the enrolled population under other Medicare alternatives. Caring for a healthier set of PACE participants is likely to be less expensive than for a sicker group, so payments should be lower for the healthier group and higher for the sicker one.

There are several reasons to suspect that there might be favorable selection in PACE, but no evidence to date that it exists. One PACE program feature that might lead to favorable selection is the requirement for enrollees to use only physicians in the plan's network. Enrollees without extensive health care use may be most willing to do this. Second, the process for evaluating PACE candidates, while entirely appropriate, may result in favorable selection to PACE sites. Screening out enrollees whose health and safety might be at risk in a PACE program may result in enrolling a somewhat healthier group of people (even though very frail) than would be found in a representative, nursing-home-certifiable, fee-for-service population.

A third payment question is the degree to which Medicare's payment for PACE should be consistent with methods established under the future Medicare+Choice program (see Volume I, Chapter 3). Medicare should avoid setting up a system with inappropriate incentives for shifting patients between its Medicare+Choice program and PACE. Further, to the extent that a risk-adjustment system for Medicare+Choice might do a good job in explaining variation in health care spending, it seems reasonable to apply that system to other settings. On the other hand, the diagnosis-based method under consideration for Medicare+Choice may not sufficiently describe the resources needed to care for patients with various degrees of functional limitations.

A final question regarding payment is whether, given small enrollments at an individual site, it may be appropriate to consider some form of partial capitation for PACE. The partial-capitation payment method would base part of a site's payment on a prospective, per person capitation rate and part on actual spending. This method

[9] Although housing is not a required part of PACE, many current demonstration sites are actively involved in securing appropriate residences for enrollees. They may require some form of assisted living in order to maintain enrollment in PACE because they are unable to manage living alone.

could take the form of risk corridors or outlier payments. One reason to think of this method is a statistical one. The number of PACE enrollees is so small that it is unlikely that any sample of fee-for-service enrollees can serve as a robust reference group for setting an accurate capitation rate. Partial capitation would have the advantage of making up in part for any tendency for the capitation rate to overpredict or underpredict spending.

Another possible benefit to partial capitation for PACE is its potential for assisting sites to finance the care of patients with exceptionally high costs. Health plans generally benefit from spreading insurance risk over a large number of enrollees, but PACE sites, with so few enrollees, cannot do this. Whether partial capitation or some type of reinsurance would be needed for this purpose, though, depends on the degree of variability in PACE enrollees' patient care needs. This is because the more variable the mix of patients, the more likely one or two of a PACE site's patients will have spending high enough to bankrupt it. One would want to first know the extent of any variation before making any recommendations that would change Medicare payment arrangements.

Partial capitation might be a poor fit with PACE, however, if it reduced PACE sites' flexibility to provide non-Medicare or Medicaid benefits or if it complicated health care and financial management for dual-eligible beneficiaries. This could happen if Medicare recognized only its benefits in the partial capitation formula. Further, existing sites may have become accustomed to operating within a fixed budget (which can be anticipated from full capitation payments) and may be able to anticipate and manage care needs successfully since the multidisciplinary team knows each enrollee very well.

To date, HCFA's evaluation has addressed only participant outcomes. The next stage of the evaluation will provide the results of an analysis of Medicare payments, costs, and any savings generated by PACE. The report from this analysis, based on data from January 1995 to early 1997, is also expected to include information on participant utilization patterns as well as functional and health status, and to address what Medicare expenditures would have been without PACE. This work is expected to be available in early 1998.

HCFA is also funding a study to reevaluate the risk-adjustment factor for Medicare PACE payments. Researchers are going to use data from the National Long-Term Care Survey as well as from the Medicare Current Beneficiary Survey. One issue this study will address is whether variation in state nursing-home certification standards result in differences in PACE enrollee characteristics across states. Results from this study are expected in late 1998.

The Commission's mandate requires recommendations on the PACE payment methodology used by Medicare and Medicaid, and on the treatment of private, for-profit entities. The upcoming results of the evaluation of cost effectiveness of PACE for Medicare will provide a useful starting point for future Commission work on Medicare and Medicaid payments, costs, and utilization. Once the for-profit PACE demonstration begins, the Commission will be able to monitor its implementation. MedPAC will also begin to develop options for evaluating PACE site performance as a first step in fulfilling its mandate to make recommendations on for-profit PACE sites.

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Chapter 11

Federal Policies Supporting Graduate Medical Education and Teaching Hospitals

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Federal Policies Supporting Graduate Medical Education and Teaching Hospitals

This chapter provides background information on federal policies supporting graduate medical education (GME) and teaching hospitals. The first section describes Medicare policy, including recent changes made under the Balanced Budget Act of 1997 (BBA). The second focuses on other relevant federal policies such as teaching programs supported by the Departments of Veterans Affairs (VA) and Defense (DOD), and programs funded under the Public Health Service Act. A discussion of the issues raised by these policies is presented in Chapter 12 of Volume I.

Medicare Policy: The Indirect Medical Education Adjustment

Teaching hospitals receive an indirect medical education (IME) adjustment to their per case payments under the hospital inpatient prospective payment system (PPS). IME payments are intended to reflect the additional costs of patient care associated with teaching. Costs may be higher in these institutions for various reasons. These include the involvement of residents and supervising physicians in patient care, the severity of illness of patients requiring specialized services available only in teaching hospitals, a costlier staff mix, more intensive treatment patterns, and the expense of developing and improving diagnostic and therapeutic technologies.

The size of the adjustment to PPS operating payments depends on the hospital's teaching intensity, as measured by the ratio of residents to hospital beds (IRB).[1] Since fiscal year 1989, the IME adjustment to PPS operating payment rates has been set at 7.7 percent for every 10.0 percent increment in teaching intensity.[2]

The BBA lowered the IME adjustment to 7.0 percent in fiscal year 1998, 6.5 percent in fiscal year 1999, 6.0 percent in fiscal year 2000, and 5.5 percent in fiscal year 2001.[3] This adjustment remains above the empirical estimate of the increase in operating costs associated with teaching; the most recent analysis indicates that, across all hospitals, a 10.0 percent increase in teaching intensity is associated with a 4.1 percent increase in Medicare operating costs per discharge (ProPAC 1997).

An IME adjustment is also applied to the federal rate portion of PPS capital payments. The capital IME adjustment factor differs from the operating adjustment in several ways. First, the measure of teaching intensity is based on the ratio of residents to average daily census (occupied beds) rather than to the ratio of residents to total hospital beds. Second, the adjustment level is set by the Secretary of Health and Human Services, rather than by law. The adjustment level is set at 2.8 percentage points for each 10.0 percent increment in the ratio of residents to average daily census, to represent the relationship between total inpatient costs (operating plus capital) per discharge and teaching intensity.

[1] This was formally referred to as the ratio of interns and residents per bed, but the term "intern" has fallen out of use. Instead, programs now refer to these individuals as first-year residents.

[2] The actual IME adjustment percentage is based on an exponential formula with a multiplier. From 1987 through 1997, the formula was set at $[(1 + IRB)^{.405} - 1) \times 1.89]$. The adjustment percentage of 7.7 is derived by multiplying the exponent (.405) by 10 and by the multiplier factor (1.89).

[3] The legislation actually changes the multiplier factor used in the IME formula. The multiplier factor is reduced from 1.89 to 1.72 during fiscal year 1998, 1.60 during fiscal year 1999, 1.47 during fiscal year 2000, and 1.35 for fiscal year 2001 and after.

IME payments are determined based on a combination of factors: the hospital's resident intensity, the number of Medicare cases, the average case mix for those cases, and the wage index and cost-of-living adjustment levels for the hospital. Medicare IME operating payments totaled an estimated $4.6 billion in fiscal year 1997.

Starting January 1, 1998, teaching hospitals also will begin receiving IME payments for the Medicare+Choice patients they discharge. The payments will be phased in over five years in 20 percent increments. Once this policy is fully implemented, hospitals will receive IME payments for each Medicare+Choice patient they discharge as if they were Medicare fee-for-service patients.

The IME adjustment is based on the number of full-time equivalent (FTE) residents training in the inpatient and outpatient departments of the hospital. Starting with fiscal year 1998, hospitals also will be able to include in their IME resident count residents training in nonhospital settings whose salaries are fully supported by the hospital.

Also starting with fiscal year 1998, the resident counts used to determine the IME adjustment will be capped at the level in the most recent cost reporting period ending in calendar year 1996. The cap does not apply to dental or podiatry residents, however. Hospitals that established new training programs before August 5, 1997, will be partially exempt from the cap, as will rural hospitals.[4]

The resident count used for determining IME payments for fiscal year 1998 is based on an average of the 1997 and 1998 resident counts. For fiscal year 1999 and beyond, it will be based on a three-year rolling average. The combination of the cap and the rolling average should lessen the impact on Medicare payments for institutions that reduce the size of their training programs, since payment will not fall in proportion to the residency positions they eliminate. (See the discussion of incentive payments below.)

Medicare Policy: Direct Graduate Medical Education Payments

Even after the shift to inpatient prospective payment in the early 1980s, direct costs were recognized by Medicare under the principles of reasonable cost reimbursement. This changed with passage of the Consolidated Omnibus Budget Reconciliation Act of 1985. Since then, direct payments have been based on three factors: (1) hospital-specific per resident payment amounts, determined using audited 1984 costs, updated for inflation; (2) the number of FTE residents; and (3) Medicare's share of inpatient days.[5] Under the Omnibus Budget Reconciliation Act of 1993, the inflation adjustment for residents in nonprimary care fields was eliminated for fiscal years 1994 and 1995.[6] As a result, the per resident amount differs for primary care and other residents. Medicare paid an estimated $2.2 billion to teaching hospitals in fiscal year 1997 for the direct costs of physicians' GME.

Per resident payment amounts vary widely across hospitals. For many, payments are less than $20,000 per resident, while for others amounts are well over $100,000 (see Figure II-11-1).[7] The Balanced Budget Act of 1997 directs the Secretary of Health and Human Services to study the variation among hospitals in the hospital overhead and supervisory physician components of their direct medical education payment amounts and the reasons for such variations. This study is due in August 1998.

Medicare's share of inpatient days has been based on the proportion of inpatient days attributable to Medicare fee-for-service patients divided by total inpatient days. As with IME payments, Medicare+Choice patients will gradually be included in the calculation of Medicare share for direct GME payments. In 1998, 20 percent of the Medicare+Choice days will be added. This percentage will increase in 20 percent increments until 2002, when all Medicare+Choice days will be included in the calculation of Medicare share.

[4] There are a number of exceptions to the cap related to hospitals with new training programs.

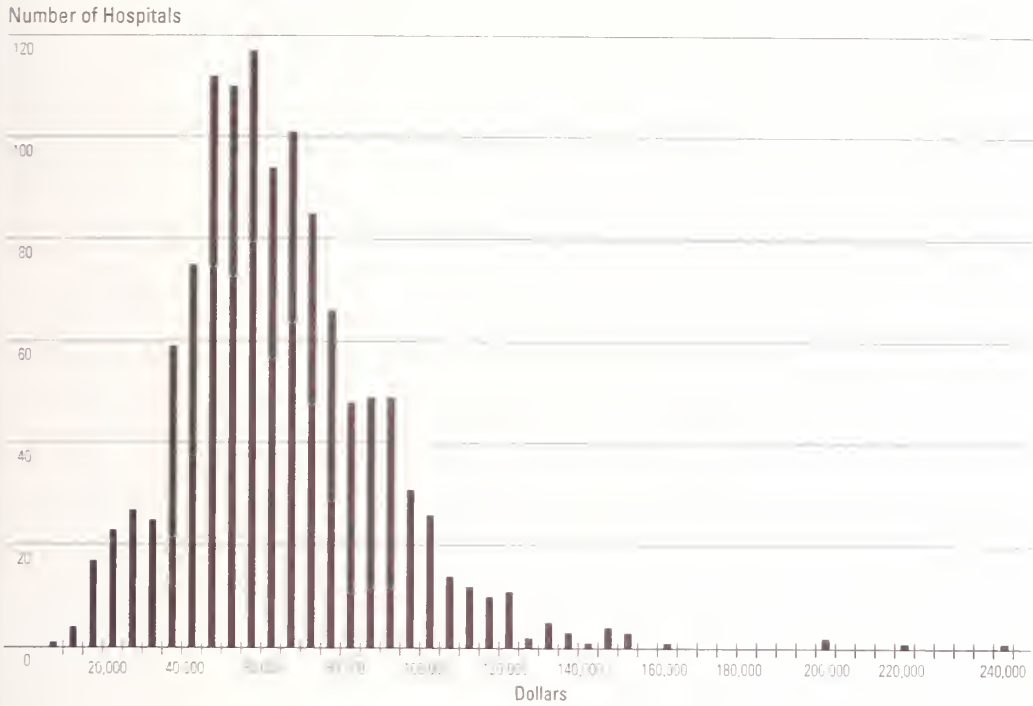
[5] Residents beyond the minimum period required for initial certification in a specialty or five years (whichever is less) are weighted as half an FTE.

[6] Nonprimary care residents are defined as all specialties except family medicine, general internal medicine, general pediatrics, preventive medicine, geriatric medicine, osteopathic general practice, and obstetrics-gynecology.

[7] It is important to remember that actual direct GME payments to these hospitals are also based on Medicare's share of patient days; a hospital with a large payment amount thus may receive low direct GME payments because of the low volume of Medicare patients in that institution.

Figure II-11-1

Distribution of Per Resident Payment Amounts, 1995



SOURCE: Medicare Payment Advisory Commission analysis of Medicare Cost Report data.

Hospitals can include in their resident count residents training in their institution and those training in other settings. To include residents training in nonhospital sites, though, the hospital must establish that it pays for substantially all the training costs in those other settings.[7] Starting in fiscal year 1998, the resident count used to determine payment will be subject to a cap like the one described above for IME payments. Similarly, the resident count used to determine payment will be an average of the resident counts for the current year and the two preceding years (for fiscal year 1998, it is a two-year average).[8]

Medicare direct graduate medical education payments currently are made only to hospitals. The BBA, however, allows the Secretary of Health and Human Services to establish rules for payment to nonhospital providers. These include federally qualified health centers, rural health clinics, Medicare+Choice organizations, and other providers the Secretary determines to be appropriate. The Secretary is expected to issue a proposal on payment to nonhospital providers in mid-1998.

Incentive Payments

One of the more controversial features of the BBA was creation of an incentive payment program for teaching hospitals or groups of teaching hospitals that voluntarily agree to reduce the number of residents they train by at least 20 percent.[10] This provision reflects the widely held view that the nation generally, and Medicare specifically, is supporting production of too many physicians. The number of physicians in training has in fact increased dramatically over the past 30 years (see Figure II-11-2).

The incentive payment program is also structured to respond to concerns that relatively too few primary care physicians are being trained. Growth in primary care has lagged behind that in other specialties, although the trend is beginning to change as more senior medical students express interest in primary care careers (see Figure II-11-3). Participants in the program must agree not to decrease the proportion of residents trained in primary care specialties.

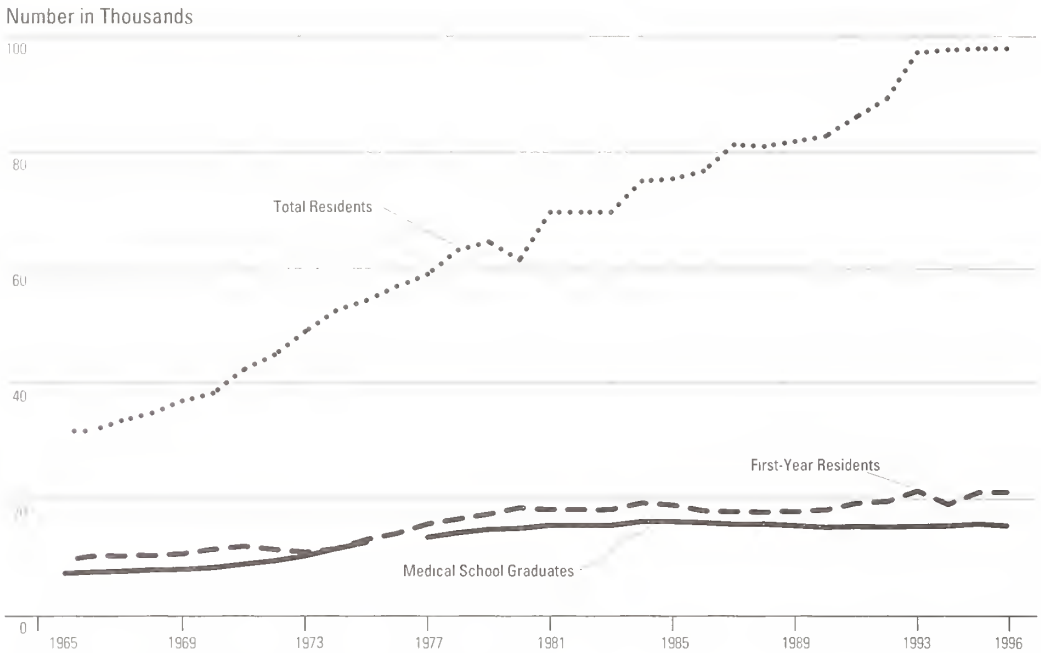
[7] The Health Care Financing Administration currently defines substantially all training costs as paying for residents' salaries and benefits in these other settings.

[8] The cap is applied to the total FTE resident count rather than the weighted count, which considers residents training in a second specialty or with more the five years of training as half an FTE. The rolling average resident count is calculated based on the three-year average of the weighted FTE resident count.

[10] The actual reduction percentage depends on the number of residents the hospital trains and whether the hospital agrees to increase those in primary care.

Figure II-11-2

Medical School Graduates, First-Year Residents, and Total Residents, 1965-1996



SOURCE: *Journal of the American Medical Association* medical education issues.

NOTE: Data for medical school graduates in 1976 not available.

No incentive payments are made for the initial 5 percentage point reduction in residents for each hospital. Hospitals will receive as an incentive payment a portion of the IME and direct GME payments that they would have gotten for positions they eliminate beyond the initial 5 percent. In each of the first two years that portion will be 100 percent of this amount; in the third year it will be 75 percent; in the fourth year it will be 50 percent; and in the fifth year it will be 25 percent. After five years, hospitals will no longer be paid for eliminated slots. If they increase the number of residents above their target amount after the fifth year of the program, they will be required to return all prior incentive payments. Applications to the program will be due by November 1, 1999, but regulations governing the program must first be developed by the Secretary of Health and Human Services.

Direct Medical Education Payments for Other Types of Training Programs

In addition to supporting graduate medical education, Medicare also provides cost-based reimbursement to hospitals for operating training programs in nursing and a variety of other allied health fields. Payments for nursing education are limited to hospital-based diploma programs. While hospitals used to be the major training site for nurses, today they account for only a small fraction of all training. Other hospital-based programs eligible for payments include cytotechnology, inhalation therapy, medical records, medical technology, nurse anesthetists, practical nursing, occupational therapy, physical therapy, and X-ray technology. In addition, the costs of dietetic, pharmacy, and hospital administrative residency programs are reimbursed. Medicare payments for these programs totaled about $300 million in fiscal year 1997.

Other Federal Policies

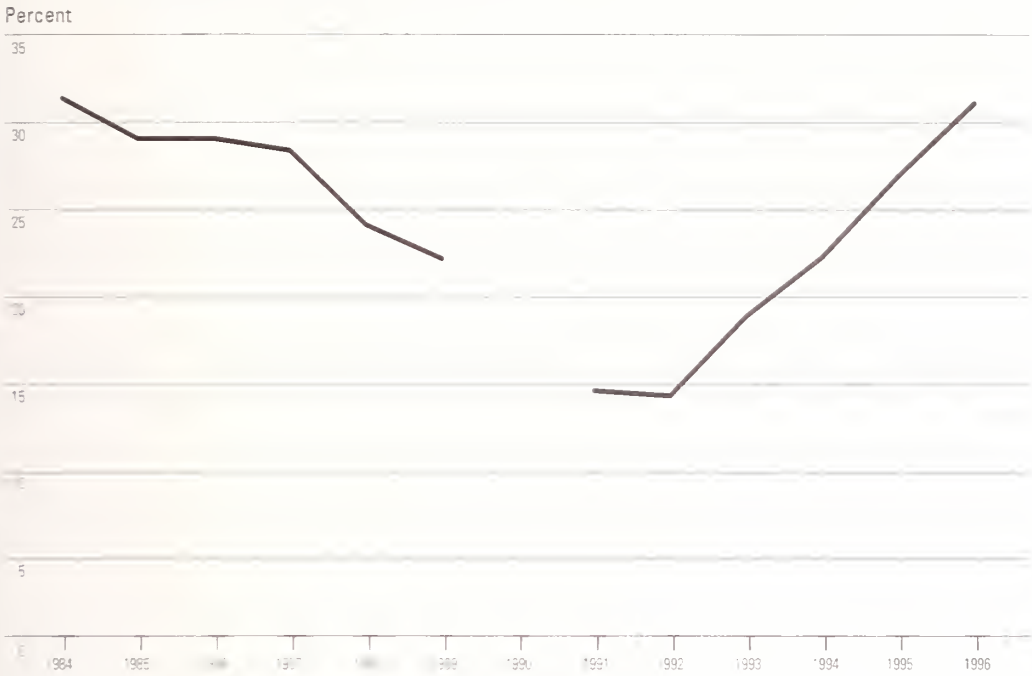
In addition to Medicare, the federal government supports GME through the Departments of Veterans Affairs and Defense, state Medicaid programs, the National Health Service Corps (NHSC), and grant programs funded under the Public Health Service Act. Funding for these programs accounted for about one-quarter of all federal dollars related to GME training (see Table II-11-1).

VA Support

The Department of Veterans Affairs funds about 8,900 resident positions each year. With about 4 residents rotating through each position, the VA participates in the training of more than 32,000 residents annually at a cost of about $400 million (VA 1997). The VA pays the hospital or training facility an institution-specific stipend level, ranging from about $32,000 to $38,000 (Holland 1997).

Figure II-11-3

Share of Senior Medical Students Interested in Primary Care Careers, 1984-1996



SOURCE: Association of American Medical Colleges' Medical School Graduation Questionnaire.

NOTE: Survey data not available for 1990. A new question was introduced in 1991. In 1995, 65 percent of graduating students expressed a specialty preference. In 1984, about 92 percent expressed a preference.

Table II-11-1

Federal Outlays for Graduate Medical Education

Program	Federal Appropriation (In Millions)	Proportion of Federal Support
Medicare	$6,800	74%
Medicaid	1,750	19
Department of Veterans Affairs	402	4
Department of Defense	166	2
Public Health Service (Title VII)	92	1
Total	9,210	100

SOURCE: Medicare Payment Advisory Commission analysis of federal sources.

NOTE: Medicare, Medicaid and the Department of Veterans Affairs information is for 1997. Department of Defense and Public Health Service information is for 1998. Medicaid spending includes both federal and state dollars and reflects the average of two spending estimates by the Intergovernmental Health Policy Project and the National Association of Children's Hospitals.

Recently, the VA has focused on shifting the specialty distribution of its trainees toward primary care. Between the 1992-1993 and the 1995-1996 academic years, the share of VA-funded positions in primary care disciplines rose from 34 percent to 39 percent. Recognizing the need to further increase the ratio of generalist to specialist residency positions, the VA's Under Secretary for Health convened a committee to determine how this should be done. The committee recommended shifting the proportion of generalist residencies in the VA to 49 percent over three years. It also recommended replacing 1,000 specialist positions with 750 generalist positions and eliminating the remaining 250 specialist positions.

DOD Support

The Department of Defense also supports graduate medical education by paying the salaries of approximately 3,000 residents who complete their training in the military. The military pays a salary of about $47,500 per resident. The total direct GME costs incurred by DOD is $166.2 million. Besides $142.5 million per year in residents' salaries, these dollars go toward administrative expenses ($16.4 million), consultant professors (about $2 million), and trips by residents for civilian training ($5.3 million) (Opsut 1997).

DOD's Health Professions Scholarship Program also provides support for medical students. These students may train in residency programs wherever they choose; they are not restricted to military sites. If they are awarded a scholarship, however, they are expected to repay it by serving in the military's health system either during training or afterwards, with one or more year of service for each year of scholarship.

Medicaid Support

Federal policy does not require states to pay for the costs of GME as part of their Medicaid programs. Many states have historically adopted policies similar to those used by Medicare, however, making additional payments to teaching hospitals. Some of the details vary. For example, states may use a different fiscal year on which to base their direct medical education cost per resident, or a different multiplier when calculating their indirect medical education payment. Others states provide a single payment for GME that does not distinguish between direct and indirect costs.

Recently, a number of states have begun to make changes in Medicaid payments for GME to require more accountability in meeting work force goals. TennCare (Tennessee's Medicaid program), which originally discontinued all GME payments, recently restored funding so that the money follows residents to the site of training. Financial incentives are also included in payments distributed to the state's medical schools to encourage primary care training and the placement of physicians in underserved areas. Michigan has also created incentives for training primary care physicians and a new grant program to support innovation in educational programs meeting certain policy goals (Center for Health Workforce Studies 1997).

The exact amount of Medicaid GME payments nationally is unknown because the states are not required to report GME expenditures to the Health Care Financing Administration. Spending figures therefore vary widely. For example, the Intergovernmental Health Policy Project estimated fiscal year 1995 expenditures to be $1.3 billion, while the National Association of Children's Hospitals estimate was $2.2 billion (GAO 1997).

National Health Service Corps

The National Health Service Corps was created in 1972 by the Emergency Health Personnel Act Amendments to "improve and maintain the health status of medically underserved populations of the Nation by addressing the geographic maldistribution of health manpower resources" (Office of Rural Health Policy 1990). Intended to place clinicians providing community-based primary care in underserved areas, the Corps provides full scholarships to pay tuition or repay loans for medical education. Recipients of these awards repay their debt with service. For each year of tuition support or loan repayment, the debtor must serve one year in a federally designated rural Health Professional Shortage Area. Sites eligible to receive NHSC scholars are designated annually, and as of 1994, about 13,000 physicians had been supported. In 1996, about 2,230 clinicians served in the NHSC, 70 percent of them in rural areas.

Table II-11-2

Public Health Service Title VII Funding for Selected Programs, Fiscal Years 1997 and 1998 (In Thousands)

Program	1997	1998
Family medicine training/departments	$ 49,256	$ 49,424
General internal medicine and pediatrics	17,618	17,678
Public health and preventive medicine	7,998	8,025
General dentistry residencies	3,785	3,798
Geriatric education centers and training	8,881	8,711
Rural interdisciplinary traineeships	4,153	4,167
Total	91,691	91,803

SOURCE: Committee on Appropriations, U.S. House of Representatives, 1997.

While the NHSC does not fund residencies or fellowships, it may have a substantial effect on the physician marketplace. Total appropriations for the NHSC program were just under $80 million in fiscal year 1997. That was split about equally between scholarships and loan repayment, with $30.7 million and $36.3 million allocated for fiscal year 1997, respectively (Funston 1997). The NHSC funded scholarships for 326 of the 2,030 applicants for the 1997-1998 school year. In fiscal year 1997, the program received 801 applications for loan repayment positions by all types of health professionals, 515 of which were awarded. In the same year, 322 applications were submitted by physicians, only 227 of which were awarded (Chen 1997).

The loan repayment program has recently undergone some changes. First, beginning in 1997, applicants were required to find an eligible site and negotiate an employment contract prior to submitting an application; previously, this had been the responsibility of program administrators. Second, the minimum service obligation was increased from one to two years. The maximum repayment amount remains at $25,000 per year for the first two years and increases to $35,000 for each additional year.[11] In order to reapply, program participants must provide proof that their award was used to repay their educational debt.

[11] These awards include an additional 39 percent to cover the costs of federal income tax that must be paid on the award.

Grant Programs Under the Public Health Service Act

Title VII of the Public Health Service Act provides scholarship, loan, and grant support for health professions education. This includes the fields of medicine, osteopathy, dentistry, veterinary medicine, optometry, podiatry, pharmacy, public health, and health care administration. Title VII was created in 1963 to increase the supply of physicians, but has since redirected its focus. It currently funds programs that are concerned with redistributing physicians toward rural practice, increasing the supply of primary care physicians relative to specialists, and attracting minority students. Funding goes to students, health professionals, and institutions.

In 1997, residents were supported through six Title VII programs (see Table II-11-2). Three of these programs—general dentistry, family medicine, and general internal medicine and pediatrics—are solely devoted to residency training. The other three—public health and preventive medicine, geriatric education centers, and rural interdisciplinary traineeship programs—support residents and fellows in addition to other activities. Total appropriations for Title VII programs for fiscal year 1998 were $242.6 million, approximately one-third of which went to residents.[12] The other 18 Title VII programs supported a variety of health professions programs not specifically targeted to medical students or residents.[13]

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[11] This rough estimate of $91.8 million was calculated by summing the fiscal year 1998 appropriations for the six Title VII programs that fund residency training. It is an overestimation as some of the programs support residents and residency programs with only part of their budgets.

[12] These additional programs include grants to communities for scholarships, funding for health professions data systems, research on health professions issues, nurse loan repayment for shortage area service, centers of excellence, health careers opportunity program, exceptional financial need scholarships, faculty loan repayment program, financial assistance for disadvantaged health professions students, scholarships for disadvantaged students, physician assistants program, health administration traineeship/projects, area health education centers, border health training centers, allied health special projects, podiatric medicine, and chiropractic demonstration grants.

Appendix A

Commission Members

Gail R. Wilensky, Ph.D., is chair of the Commission. She is the John M. Olin senior fellow at Project HOPE, where she analyzes and develops policies relating to health care reform and ongoing changes in the medical marketplace. She also frequently advises members of Congress and others on the policies and politics of health care reform. Former chair of the Physician Payment Review Commission, Dr. Wilensky has held several posts in the executive branch, most recently as deputy assistant to the President for policy development during the Bush Administration and, before that, as administrator of the Health Care Financing Administration. Recipient of numerous professional awards, she is a member of the Institute of Medicine, a trustee of the Combined Benefits Fund of the United Mine Workers of America, and a governor for the Research Triangle Institute. In addition to serving on many other professional committees and corporate boards, Dr. Wilensky is a well-known speaker who has published widely on health policy, economics, and financing. She received a B.A. in psychology and a Ph.D. in economics from the University of Michigan.

Joseph P. Newhouse, Ph.D., is vice chair of the Commission. He is the John D. MacArthur Professor of Health Policy and Management at Harvard University and director of Harvard's Division of Health Policy Research and Education. He has been at Harvard since 1988. Previously, Dr. Newhouse was a senior corporate fellow and deputy program manager for health sciences research and head of the economics department at RAND. He has conducted research in health care financing, economics, and policy and was principal investigator for the RAND Health Insurance Study. Dr. Newhouse has served on many technical panels for health-related organizations, including the National Academy of Social Insurance, the Agency for Health Care Policy and Research, the Health Care Financing Administration, the Workers' Compensation Research Institute, and the Association of American Medical Colleges. He is a member of the Institute of Medicine, as well as a former chair of the Prospective Payment Assessment Commission and a member of the Physician Payment Review Commission. He is also a past president of the Association for Health Services Research. Dr. Newhouse is editor of the *Journal of Health Economics* and associate editor of the *Journal of Economic Perspectives*. He received a B.A. from Harvard College and a Ph.D. in economics from Harvard University.

P. William Curreri, M.D., is president of Strategem of Alabama, Inc., an international health care marketing and consulting firm. Dr. Curreri has served as professor, chairman, and chief of surgery at the University of South Alabama. He was also on the faculties of the University of Washington School of Medicine and Cornell Medical Center. He previously served on the Physician Payment Review Commission. Dr. Curreri is a former president of the American Burn Association, the Society of University Surgeons, the Halstead Society, and the American Association for the Surgery of Trauma. Author of numerous articles on surgery, Dr. Curreri is a member of the editorial boards of several major surgical and burn care journals and a past editor-in-chief of *The American Surgeon*. A frequent adviser to the National Institutes of Health, Dr. Curreri was a member and former chair of its Surgery, Anesthesia, and Trauma Study Section. He is also a member of the American Board of Surgery and a former member of the executive committee of the board of governors of the American College of Surgeons, where he was secretary from 1987 to 1989. Dr. Curreri received a medical degree from the University of Pennsylvania and completed a surgical residency at the Hospital of the University of Pennsylvania.

Anne B. Jackson is a member of the National Legislative Council of the American Association of Retired Persons and served as chairperson of the Health and Future Generations Committee. She also previously served on the Physician Payment Review Commission. A registered nurse for 45 years, she retired in 1989. Mrs. Jackson was a professor in the Department of Nursing at City University of New York and was medical supervisor, head nurse, and staff nurse for the Veterans Administration (now the Department of Veterans Affairs). She is a member of the Institute of Medicine's Roundtable on Research and Development of Drugs, Biologics, and Medical Devices. Mrs. Jackson received a bachelor's degree in education from Hunter College and a master's in nursing administration from Columbia University Teacher's College.

Spencer Johnson has been president of the Michigan Health and Hospitals Association since 1985. Previously, he was executive vice president of the Hospital Association of New York State. Mr. Johnson's prior experience includes staff positions on the U.S. Senate Committee on Human Resources and in the U.S. House of Representatives. He was associate director of the Domestic Council for Health, Social Security, and Income Assistance from 1976 to 1977, where he was responsible for policy planning and development for President Gerald Ford. He served on the Prospective Payment Assessment Commission as well as various boards, including those of the Albany Medical College, the Washington Hospital Center, the Alpha Center, and the Genesee Regional Health Planning Council. He is currently a board member of Blue Cross Blue Shield of Michigan and the MHA Insurance Company. Mr. Johnson received a B.A. in journalism from St. Bonaventure University and an M.P.A. in health policy and planning from Cornell University.

Peter Kemper, Ph.D., is vice president of the Center for Studying Health System Change. He directs the center's Community Tracking Study, a major national study of change in the health care system and its effect on health care delivery, access, cost, and quality. Before that, he was director of the Division of Long-Term Care Studies at the Agency for Health Care Policy and Research, where he headed studies of nursing home and home health care. Dr. Kemper has published widely on long-term care of the elderly, including home care for those with chronic care needs, nursing home use, and financing of care. Earlier in his career, he was a director of Mathematica Policy Research and an assistant professor at Swarthmore College. Dr. Kemper received a B.A. from Oberlin College and a Ph.D. in economics from Yale University.

Judith R. Lave, Ph.D., is professor of health economics at the Graduate School of Public Health and co-director of the Center for Research on Health Care at the University of Pittsburgh. She holds secondary appointments in the Katz Graduate School of Business and in the departments of economics and psychiatry. Previously, she served on the Prospective Payment Assessment Commission. At the U.S. Department of Health and Human Services, she was the director of the Division of Economic and Quantitative Analysis in the Office of the Deputy Assistant Secretary and director of the Office of Research in the Health Care Financing Administration. Dr. Lave is also a member of the Institute of Medicine and the National Academy of Social Insurance. She is past president of the Association for Health Services Research and the Foundation for Health Services Research. In addition, Dr. Lave chaired the technical panel on health and was a member of the expert panel on income and health care for the Advisory Council on Social Security. She served on the editorial boards of the *Journal of Health Politics, Policy, and Law* and the Health Administration Press. She received a B.A. from Queen's University in Canada, from which she also received an honorary LL.D., and a Ph.D. in economics from Harvard University.

D. Ted Lewers, M.D., a practicing nephrologist and internist, is also on the staff at the Memorial Hospital in Easton, Maryland. A member of the board of trustees and secretary-treasurer of the American Medical Association, Dr. Lewers is medical director of the Easton and Chestertown Renal Treatment Center, chair of the board and chief executive officer at the Medical Mutual Liability Insurance Company of Maryland, and chair of the board of the Health Enhancement Center, Inc. Previously, he served on the Physician Payment Review Commission. Long active in organized medicine, Dr. Lewers served as president of the Medical and Chirurgical Faculty of Maryland from 1985 to 1986 and as vice chair of the American Medical Association's Relative Value Scale Update Committee. Dr. Lewers received a B.A. from the University of Maryland and a medical degree from the University of Maryland School of Medicine. He completed an internship at the University of Maryland (Baltimore), a residency at Maryland General Hospital, and a fellowship in nephrology at Georgetown University Hospital.

Hugh W. Long, Ph.D., is professor of health systems management at the Tulane University School of Public Health and Tropical Medicine in New Orleans. He also holds appointments at Tulane's School of Law and the Freeman School of Business, where he is a member of the graduate faculty. Dr. Long is the founder and faculty director of Tulane's master's of medical management degree program for physicians. Previously, he served on the Prospective Payment Assessment Commission. He has also taught at Yale, Stanford, San Jose State, and Ohio State universities. Dr. Long has served as an ad hoc adviser on health care financing to the Committee on Ways and Means of the U.S. House of Representatives and to the Committee on Finance of the U.S. Senate. He has also testified before these committees on matters of health financing policy. He currently serves as the chairman of the Medicare Geographic Classification Review Board. He is the author of numerous articles on health care financing and management and is a member of the faculty of the American College of Physician Executives. Dr. Long received a B.A. from Ohio State University, an M.B.A. and a Ph.D. in business administration and finance from Stanford University, and a J.D. from Tulane University.

William A. MacBain is senior vice president, Health Plan Operations—New York, for the Penn State Geisinger Health System and executive director of Penn State Geisinger Health Plan, Inc. He is a board member of the American Association of Health Plans and a past commissioner of the Prospective Payment Assessment Commission. His broad background in managed care encompasses general management operations, marketing, planning, finance, product and network development, rate setting, and government affairs. Mr. MacBain joined Penn State Geisinger in 1988. He began his career with Prepaid Health Plan where he advanced to director of plan administration. In 1982, Mr. MacBain was named vice president of finance for the Nassau (New York) Plan for Healthcare. After that, he was director of operations for HMO of Oklahoma in Tulsa. He has a B.A. and a master's degree in hospital and health service administration from Cornell University.

Woodrow A. Myers, M.D., is director of health care management for the Ford Motor Company. He is responsible for health benefits for active and retired employees and their dependents, for occupational health and safety services, and for disability and workers' compensation programs. Previously, he was senior vice president and corporate medical director of The Associated Group (now Anthem Blue Cross Blue Shield). He was also New York City Health Commissioner and served as Indiana State Health Commissioner and secretary to the Indiana State Board of Health. Prior to that, Dr. Myers was associate director of the medical-surgical intensive care unit and chairman of the quality assurance program at the San Francisco General Hospital, as well as an assistant professor of medicine at the University of California, San Francisco. A past president of the Association of State and Territorial Health Officials and former adviser to the Committee on Labor and Human Resources, U.S. Senate, Dr. Myers has taught at Cornell University, University of California, San Francisco, and Indiana University. He is on the boards of Harvard University, UCSF/Stanford University Health Systems, and the Charles Drew Medical School in Los Angeles. He is also a fellow of the American College of Physicians and of the American College of Physician Executives and is a former Robert Wood Johnson Foundation clinical scholar. Dr. Myers received a B.S. from Stanford University, a medical degree from Harvard Medical School, and an M.B.A. from Stanford University Graduate School of Business.

Janet G. Newport is corporate vice president of regulatory affairs at PacifiCare Health Systems, Inc., the nation's largest coordinated care Medicare contractor. Her responsibilities include monitoring and supporting internal operational compliance, policy development, and regulatory interpretation. She also acts as the liaison with key regulatory agencies. Ms. Newport serves on several technical and advisory committees for the American Association of Health Plans and is an industry representative on the Health Care Financing Administration's (HCFA) Medicare Council. In addition, Ms. Newport has served as an industry representative on HCFA technical committees and is a former chair of the American Managed Care and Review Association's Medicare Task Force. She has more than 20 years of public affairs experience, including over 10 years running the Washington, D.C., office of another Medicare risk contractor. Ms. Newport received a B.A. from American University.

Alice F. Rosenblatt is senior vice president and chief actuary of WellPoint Health Networks, where she is responsible for the corporate actuarial and strategic planning functions. Before joining WellPoint in 1996, she was a principal at Coopers & Lybrand L.L.P, where she consulted with insurers, health plans, providers, and employers. She is a former senior vice president and chief actuary of Blue Cross Blue Shield of Massachusetts and Blue Cross of California. Other positions include work for The New England and William M. Mercer, Inc. Ms. Rosenblatt was on the board of governors of the Society of Actuaries and currently serves on the board of the American Academy of Actuaries. She previously chaired the academy's federal health committee and work group on risk adjustment. Ms. Rosenblatt has testified on risk adjustment before subcommittees of the Committees on Ways and Means and Energy and Commerce of the U.S. House of Representatives. She has a B.S. and an M.A. in mathematics from City College of New York and the City University of New York, respectively.

John W. Rowe, M.D., is president of the Mount Sinai School of Medicine and the Mount Sinai Hospital in New York City, one of the nation's largest academic health science centers. He is also a professor of medicine and geriatrics. Before becoming president of Mount Sinai in 1988, Dr. Rowe was a professor of medicine and the founding director of the Division on Aging at Harvard Medical School and chief of gerontology at Boston's Beth Israel Hospital. He has written more than 200 scientific pieces, mostly on the physiology of the aging process, and a leading textbook of geriatric medicine. Dr. Rowe is director of the MacArthur Foundation Research Network on Successful Aging. He served on the board of governors of the American Board of Internal Medicine and as president of the Gerontological Society of America and is a member of the Institute of Medicine. He received a B.S. from Canisius College and a medical degree from the University of Rochester.

Gerald M. Shea is assistant to the president for government affairs at the American Federation of Labor-Congress of Industrial Organizations. Previously, he served as executive assistant to the union's president, executive assistant to its secretary-treasurer, director of its employee benefits department, and head of its health care reform campaign. He also served on the Prospective Payment Assessment Commission. Mr. Shea's prior experience includes 12 years with the national office of the Service Employees International Union, where he held various positions, including assistant to the president for government affairs and health care division director. Before that, he was executive director and business manager of two local unions. Mr. Shea is a member of the Joint Commission on the Accreditation of Health Care Organizations, the Foundation for Accountability, and the advisory board of the Social Security Administration. He received a B.A. from Boston College.

Staff Biographies

Lauren B. LeRoy, Ph.D., was executive director of the Medicare Payment Advisory Commission (MedPAC) until January 1998, and is now president and chief executive officer of Grantmakers in Health. From 1995 to 1997 she served as executive director of the Physician Payment Review Commission, where she had been deputy director since 1986. Before that, Dr. LeRoy was associate director of the Commonwealth Fund Commission on Elderly People Living Alone. She spent more than a decade at the Institute for Health Policy Studies, University of California, San Francisco, where she was assistant director and director of the Institute's Washington office. Before that, she was an analyst at the Department of Health, Education, and Welfare. Dr. LeRoy's research interests and published work have focused on Medicare reform, physician training and practice, the nurse labor market, and health care for the elderly. She is a member of the National Academy of Social Insurance and a fellow of the Association for Health Services Research. She received a Ph.D. in social policy planning from the University of California, Berkeley.

Laura A. Dummit was a deputy director through February 1998, and is now associate director, Health Financing and Systems Issues, in the U.S. General Accounting Office. At MedPAC, Ms. Dummit directed the implementation of the Commission's work on Medicare payment policies for all post-acute care providers, hospital outpatient departments, and facilities that provide dialysis, as well as issues related to Medicare and private sector capitation and managed-care policies. Before joining the Commission, Ms. Dummit was with the Alpha Center and the Office of the Assistant Secretary for Planning and Evaluation in the Department of Health and Human Services (HHS). Ms. Dummit received a master's of science in public health from the University of North Carolina at Chapel Hill.

Stuart Guterman is a deputy director. He oversees the Commission's work on a broad range of issues related to developing and evaluating Medicare payment rates, including fee-for-service hospital payment and Medicare+Choice payments. Mr. Guterman is also responsible for analyses of hospital payments and costs from all payers, as well as many access and quality issues. Before coming to the Commission, Mr. Guterman was chief of institutional studies in the Health Care Financing Administration's (HCFA) Office of Research. He received an M.A. in economics from Brown University and completed his course work toward a Ph.D. in economics at the State University of New York at Stony Brook.

Jack Ashby is a principal policy analyst. He is responsible for the Commission's work on the measurement of productivity and hospital product change, hospital financial analyses, the disproportionate share adjustment, and Medicare per capita cost analysis. Before joining the Commission, Mr. Ashby was vice president for finance at the District of Columbia Hospital Association. Previously, he held positions in hospital administration (at the University of Pittsburgh Medical Center) and hospital management engineering (at Blue Cross of Western Pennsylvania), and also worked for a Washington area health research firm. Mr. Ashby received a master's of hospital administration from the University of Michigan.

Louisa A. Buatti is an analyst. Her responsibilities include work in the areas of scientific and technological advances affecting hospital payment updates, payment policies for home health care, end-stage renal disease payment policy, and rural health care providers. Prior to coming to the Commission, Ms. Buatti was special assistant to the associate administrator for policy at HCFA. She previously worked in HCFA's Bureau of Policy Development and in the Health Standards and Quality Bureau. Ms. Buatti received a master's of health sciences degree in health policy from the Johns Hopkins University and a B.A. from the University of Michigan.

Claire D. Burnett is a junior analyst. Her work at the Commission focuses on beneficiaries who are dually eligible for Medicare and Medicaid, federal policies supporting graduate medical education, and care for the dying. She received a master's degree in public health from the University of Rochester.

Wylene Carlyle is a member of the support staff. She has been with the Commission since January 1990. Before that, Ms. Carlyle was an administrative assistant at OSS Associates/Franklin School in Washington, D.C. She is certified in word processing, Lotus 1-2-3, and has extensive experience with personal computers.

Andrew L. Cosgrove is an analyst. His work focuses on hospital payments and costs by payer, Tax Equity and Fiscal Responsibility Act target rate update, post-acute care services in managed care, consumer information for managed care, and hospice issues. Prior to joining the Commission, Mr. Cosgrove was an analyst with the District of Columbia Commission on Health Care Finance, where he reviewed Medicaid reimbursement policy, especially long-term care financing. Before that, he was an analyst in the Information Technology Division of the University of Michigan. Mr. Cosgrove received a master's degree in public policy from the University of Michigan and a B.A. from the University of Rochester.

Delores J. Curtis is responsible for research contract management, the Commission's world wide web site, report production, and a variety of tasks involving office management and technical computer support. Ms. Curtis joined the Commission staff in April 1990 from the Office of the Assistant Secretary for Planning and Evaluation at HHS.

Diane Ellison is the office manager. Before joining the Commission, she spent 18 years working for U.S. Senator Bill Bradley. She served as the assistant to the senator's chief of staff and later as the senator's office manager. At the Commission, she is responsible for personnel, Commission meeting and annual retreat planning, and office operations.

Helaine I. Fingold is an analyst and general counsel. She is responsible for legislative and regulatory monitoring, consumer protection issues, Medicare+Choice plan standards, and Medicaid managed care issues. Ms. Fingold previously practiced health law with the law firm of Epstein Becker and Green. Before that, she was a legal/policy analyst with the Office of Research and Demonstrations at HCFA, and a staff attorney with the Office of the General Counsel, Health Care Financing Division, HHS. She received a J.D. from Northeastern University School of Law in Boston and a B.A. from the University of Massachusetts at Amherst.

Timothy F. Greene is a senior analyst. Since joining the Commission in July 1992, Mr. Greene has studied Medicare capital payment policy, outpatient payment reform, and diagnosis-related group refinement. Previously, he was with HCFA's Office of Research, where he worked on hospital payment policy, case-mix measurement, and hospital malpractice. While at HCFA, Mr. Greene was specially assigned to the Commission on the Future Structure of Veterans Health Care at the Department of Veterans Affairs. He received a master's of business administration from the Wharton School, University of Pennsylvania, and a master's in economics from the State University of New York at Stony Brook.

Kevin J. Hayes, Ph.D., is a senior analyst. His work at the Commission focuses on analysis of claims and survey data to monitor Medicare beneficiaries' access to care, implementation of resource-based practice expense relative values, and the impact of the Medicare Fee Schedule on physician payment. Previously, he held various local and federal health care planning positions. He received a doctorate in health policy and administration from the University of North Carolina at Chapel Hill.

Annette Hennessey is management coordinator. Before joining the Commission, she worked for U.S. Senator Bill Bradley, where she was primarily responsible for administration of the legislative staff. At the Commission, she is involved in a range of administrative operations, including developing Commission policies and styles, managing staff administrative needs, and coordinating the design and relocation of the Commission's new offices. She received a bachelor's degree in political science from Mississippi State University in Starkville.

John F. Hoadley, Ph.D., was a principal policy analyst. In April, he is joining the Department of Health and Human Services as a division director in the Office of the Assistant Secretary for Planning and Evaluation. Before joining the Commission, he taught political science at Duke University, was a congressional fellow and legislative assistant for U.S. Representative Barbara B. Kennelly, and developed educational sessions for policy makers at George Washington University's National Health Policy Forum. Dr. Hoadley's most recent work at the Commission centered around Medicare+Choice (both payment and nonpayment issues), the changing health care market, and Medicaid managed care. Previously, he has worked on other issues, including health system reform, provider-sponsored organizations, risk adjustment, global budgets, and beneficiary perspectives on Medicare reform. He received a doctorate in political science from the University of North Carolina at Chapel Hill.

Christopher Hogan, Ph.D., is a principal policy analyst. His recent work at the Commission has focused on risk adjustment, the adjusted community rate, and improving the performance of traditional fee-for-service Medicare. In prior years, he conducted analyses of private insurers' fees, areas of poor access to care, and medical savings accounts. He has also worked on such issues as the Medicare volume performance standard system and Medicare beneficiaries' access to care. He holds a doctorate in economics from Northwestern University.

Ann Johnson is the executive assistant. She has been with the Commission since 1987. Over time her responsibilities have included assisting with financial management, report production, and supporting the executive staff. Previously, she was a secretary at the Food and Drug Administration.

Dana K. Kelley is a senior analyst. She joined the Commission in 1994. Her primary responsibilities relate to Medicare's coverage of and payment for skilled nursing facility services and services provided to beneficiaries with end-stage renal disease. She also works on issues related to hospital outpatient services and Medicare's disproportionate share payment adjustment. Before joining MedPAC, Ms. Kelley was an analyst with Lewin-VHI, a health care consulting firm. She received an M.P.A. from the University of Pittsburgh's Graduate School of Public and International Affairs and a B.A. from the College of William and Mary.

Deborah F. Kramer is the systems administrator. Before joining the Commission, she was a confidential assistant in the Executive Office of the President in the Office of Management and Budget and a legislative aide in the office of U.S. Senator Bill Bradley. At the Commission, she is responsible for computer network operations, telecommunication systems, and the production of publications. She received a bachelor's degree in public administration and is currently pursuing a master's degree in computer information systems.

Craig K. Lisk is a senior analyst. He has been with the Commission sinee 1987, working on a variety of hospital-related issues, including the hospital payment update, graduate medieal education payment policy, transfer payment, and hospital labor markets. He has also worked on issues related to post-acute care, managed care, and quality of care under Medieare. Previously, Mr. Lisk worked at the Congressional Budget Office in the Human Resources and Community Development Division, where he foeused on selected Medicare hospital payment issues. He received an M.S. in public policy analysis and a B.A. in political science and statisties from the University of Rochester.

James E. Mathews, Ph.D., is an analyst. He is responsible for the Commission's work on payment policies for hospital outpatient departments and ambulatory surgieal centers, payment and cost analyses for skilled nursing facilities and home health eare, and issues related to the Medieare+Choice program, including competitive bidding, and enrollment and disenrollment. Before joining the Commission, Dr. Mathews held positions in the Exeeutive Office of the President in the Offiee of Management and Budget, and in the Bureau of Policy Development at HCFA. He holds a doetorate in anthropology from the University of Chicago, as well as bachelor's and master's degrees from that university.

Stephanie Maxwell is an analyst. She is responsible for payment policy for PPS-exeluded hospitals, including work related to rehabilitation and long-term eare facility prospective payment. Before joining the Commission, Ms. Maxwell was a research associate at the Johns Hopkins School of Hygiene and Public Health, where she worked on several research eontraets related to Medicare and hospital payment. Prior to that, she was a policy analyst for the Advisory Council on Social Security and a research assistant in the Office of the Assistant Secretary, U.S. Public Health Service. Ms. Maxwell received a B.A. in history magna cum laude from Oberlin College and this year receives a Ph.D. in health policy/health services research from Johns Hopkins University.

Katie Merrell served as a senior analyst. She is now a senior analyst at the Center for Health Administration Studies, University of Chicago. Before joining the Commission staff, she worked for Abt Assoeiates in the areas of health economies research, income support, and edueation. She was also a research assistant for the board of governors of the Federal Reserve System, and a high school mathematics and computer science teacher. Her recent work at the Commission foeused on the implementation of resource-based practice expense relative values, Medieare+Choiee payment methods and market dynamies, and the recalibration of Medieare Fee Schedule components. Her past work at the Commission has focused on Medicare risk-plan payment policies, practice expense, geographie adjustment of the Medieare Fee Schedule, and simulating the effect of policy changes on fee schedule payments.

Michael J. O'Grady, Ph.D., is a senior analyst. Before joining the Commission, he worked for the Office for Civil Rights in both the Department of Health, Edueation and Welfare and the Department of Edueation. He was also a specialist in social legislation in the Edueation and Publie Welfare Division of the Congressional Research Service. At the Commission, Mr. O'Grady focuses on federal premium eontribution, competitive bidding under Medicare+Choiee, and new options for traditional Medieare. He holds a doctorate in politieal science from the University of Rochester.

Julian H. Pettengill is a principal policy analyst. Since joining the Commission in 1988, he has focused primarily on poliey issues related to Medicare's hospital prospective payment system. Reeent work examined factors affecting health maintenance organizations' willingness to participate in the Medicare risk program. Before joining the Commission, he worked for the Congressional Research Service and for HCFA's Offiee of Research and Demonstrations, where he earried out most of the research leading to the development of the hospital ease-mix index and other key features of the prospeetive payment system. He holds a master's degree in economics from Indiana University and completed his course work toward a Ph.D. in medical care organization at the University of Michigan.

Molly Ryan is responsible for the Commission's budget and financial management. Ms. Ryan came to the Commission from HHS's Office of the Assistant Secretary for Planning and Evaluation, where she worked in the immediate and administrative offices. Before that, she worked in the Office of Education's Regulations Office at the former Department of Health, Education and Welfare.

Anne L. Schwartz, Ph.D., served as special assistant to the executive director until January 1998. At the Commission, her analytical work addressed a range of Medicare and Medicaid issues, including physician payment and access under Medicaid, and financial protection for Medicare beneficiaries. Most recently, she focused on graduate medical education financing and physician work force issues. Previously, she held various positions as a staff member in the U.S. House of Representatives. She received a doctorate in health policy from the Johns Hopkins University.

David W. Shapiro, M.D., J.D., is a senior analyst. After completing a residency in primary care internal medicine, he was a Veterans Administration/Robert Wood Johnson clinical scholar. At the Commission, he has worked on a variety of topics, including Medicare coverage decisions and the appeals process, medical liability reform, the Medicare Fee Schedule, and data capabilities of health plans. His current work focuses on quality of care. He received a medical degree from the University of California, Los Angeles, and a law degree from Yale University.

Sarah S. Thomas is a senior analyst. She works primarily on issues related to Medicare managed care, including trends and developments in Medicare+Choice, hospital payment, post-acute care, the Program of All-Inclusive Care for the Elderly, and urban critical access hospitals. Prior to joining Commission, Ms. Thomas held positions with the Group Health Association of America, the American Hospital Association, the Budget Division of the Commonwealth of Virginia's Department of Medical Assistance Services, and the Health Care Advisory Board. Ms. Thomas received an M.S. in health policy and management from the Harvard School of Public Health and a B.A. in history from Williams College.

Sally Trude, Ph.D., was a senior analyst. In March, she is joining Health Economics Research, Inc., as a senior policy analyst. Before joining the Commission staff, Dr. Trude was an associate policy analyst at RAND working on physician payment issues. This year, her work at the Commission included vulnerable populations under Medicare+Choice, managed-care data, sustainable growth rate system, and expenditure targets. Previously, she has studied the impact of the Medicare Fee Schedule on physicians and beneficiaries, and the Medicare volume performance standard system. She received a doctorate in public policy analysis from the RAND Graduate School.

Cynthia Wilson is the receptionist. Before joining the Commission staff, she was an accounting representative for United Service Life Insurance Company. She is certified as a clerk-typist.

Appendix B

Commission Responsibilities Mandated by Congress

The Medicare Payment Advisory Commission (MedPAC) was established by the Congress in the Balanced Budget Act of 1997 (BBA, P.L. 105-33). Under that legislation, MedPAC is directed to provide the Congress with advice and recommendations on policies affecting the Medicare program.

Within the scope of this general mandate, the BBA directs the Commission to review certain specific topics relating to Medicare. MedPAC is charged with considering issues of payment, risk adjustment, risk selection, quality of care, access to care, and other major issues relating to the implementation and further development of Medicare+Choice. Its responsibility with respect to the Medicare fee-for-service program includes considering methodologies for determining and updating payments, factors affecting expenditures for services in different sectors, and the impact of fee-for-service payment policies on access and quality of care for Medicare beneficiaries. The Commission is also required to review how Medicare payment policies affect health care delivery beyond the program itself and to assess the implications of broader health care system changes on Medicare.

MedPAC is to submit its findings on these topics to the Congress through two yearly reports. The first report, containing recommendations on Medicare payment policy, is to be submitted by March 1. The second report, exploring issues affecting the Medicare program and its relationship to the broader health care system, is to be submitted by June 1. MedPAC is also required to comment on reports submitted to the Congress by the Secretary of the Department of Health and Human Services.

Appendix C

Glossary

Acronyms

AAHP	American Association of Health Plans
AAMC	Association of American Medical Colleges
AAPCC	Adjusted Average Per Capita Cost
AARP	American Association of Retired Persons
ACG	Ambulatory Care Group
ACR	Adjusted Community Rate
ADHC	Adult Day Health Center
ADL	Activities of Daily Living
AHA	American Hospital Association
AHCPR	Agency for Health Care Policy and Research, HHS
AMA	American Medical Association
APC	Ambulatory Patient Classifications
ASC	Ambulatory Surgical Center
BBA	Balanced Budget Act of 1997
BLS	Bureau of Labor Statistics
BSF	Benefits Stabilization Fund
CBO	Congressional Budget Office
CC	Complication and/or Comorbidity
CMI	Case-Mix Index
COBRA	Consolidated Omnibus Budget Reconciliation Act of 1985
CORF	Comprehensive Outpatient Rehabilitation Facility
CPEP	Clinical Practice Expert Panel
CPI	Consumer Price Index
CPI-U	Consumer Price Index for Urban Consumers
CPT	Current Procedural Terminology
CRS	Congressional Research Service
DCG	Diagnostic Cost Group
DRG	Diagnosis-Related Group
DOD	Department of Defense
DSH	Disproportionate Share Hospital
ECI	Employment Cost Index
EM	Evaluation and Management
ESRD	End-Stage Renal Disease
FIM-FRG	Functional Independence Measure–Function Related Group
FTE	Full-Time Equivalent
FY	Fiscal Year
GAO	General Accounting Office
GDP	Gross Domestic Product
GME	Graduate Medical Education
GPCI	Geographic Practice Cost Index
HCC	Hierarchical Coexisting Conditions
HCFA	Health Care Financing Administration, HHS
HCPCS	HCFA Common Procedure Coding System
HHS	Department of Health and Human Services
HI	Hospital Insurance
HMO	Health Maintenance Organization
HPSA	Health Professional Shortage Area
HUD	Department of Housing and Urban Development
IADL	Instrumental Activities of Daily Living
ICD-9-CM	International Classification of Diseases, Ninth Revision, Clinical Modification
IME	Indirect Medical Education
IMG	International Medical Graduate
LOS	Length of Stay
MCBS	Medicare Current Beneficiary Survey
MedPAC	Medicare Payment Advisory Commission

MEI	Medicare Economic Index
MPCC	Medicare Per Capita Cost
NHSC	National Health Service Corps
NRAA	National Renal Administrators Administration
OBRA	Omnibus Budget Reconciliation Act
OPD	Outpatient Department
PACE	Program of All-Inclusive Care for the Elderly
PIP	Principal Inpatient Diagnosis
POS	Point of Service
PPO	Preferred Provider Organization
PPRC	Physician Payment Review Commission
PPS	Prospective Payment System
PRO	Peer Review Organization
ProPAC	Prospective Payment Assessment Commission
RBRVS	Resource-Based Relative Value Scale
RUC	RVS Update Committee
RVS	Relative Value Scale
RVU	Relative Value Unit
SAF	Standard Analytical Files (Medicare)
SMI	Supplementary Medical Insurance
SNF	Skilled Nursing Facility
SSDI	Social Security Disability Insurance
SSI	Supplemental Security Income
TEFRA	Tax Equity and Fiscal Responsibility Act of 1982
VA	Department of Veterans Affairs
VPS	Volume Performance Standard

Legislation (Listed Chronologically)

HMO Act	Health Maintenance Organization Act of 1973, P.L. 93-222, enacted December 29, 1973.
ERISA	Employee Retirement Income Security Act of 1974, P.L. 93-406, enacted September 2, 1974.
OBRA80	Omnibus Budget Reconciliation Act of 1980, P.L. 96-499, enacted December 5, 1980.
TEFRA	Tax Equity and Fiscal Responsibility Act of 1982, P.L. 97-248, enacted September 3, 1982.
DEFRA	Deficit Reduction Act of 1984, P.L. 98-369, enacted July 18, 1984.
COBRA	Consolidated Omnibus Budget Reconciliation Act of 1985, P.L. 99-272, enacted April 7, 1986.
OBRA86	Omnibus Budget Reconciliation Act of 1986, P.L. 99-509, enacted October 21, 1986.
OBRA87	Omnibus Budget Reconciliation Act of 1987, P.L. 100-203, enacted December 21, 1987.
MCCA	Medicare Catastrophic Coverage Act of 1988, P.L. 100-360, enacted July 1, 1988; repealed December 13, 1989.
OBRA89	Omnibus Budget Reconciliation Act of 1989, P.L. 101-239, enacted December 19, 1989.
OBRA90	Omnibus Budget Reconciliation Act of 1990, P.L. 101-508, enacted November 3, 1990.
OBRA93	Omnibus Budget Reconciliation Act of 1993, P.L. 103-66, enacted August 10, 1993.
	Social Security Act Amendments of 1994, P.L. 103-432, enacted October 31, 1994.
HIPAA	Health Insurance Portability and Accountability Act of 1996, P.L. 104-191, enacted August 21, 1996.
BBA	Balanced Budget Act of 1997, P.L. 105-33, enacted August 5, 1997

Terms

Access: The ability to obtain needed health care services.

Activities of Daily Living (ADL): An index or scale that measures an individual's degree of independence in bathing, dressing, using the toilet, eating, and moving across a small room.

Adjusted Admissions: A measure of all patient care activity in a hospital, including both inpatient and outpatient care. Adjusted admissions are the sum of inpatient admissions and an estimate of the volume of outpatient services, expressed as the number of inpatient admissions that could have been produced with the same amount of resources. This estimate is calculated by multiplying outpatient visits by the ratio of outpatient charges per visit to inpatient charges per admission.

Adjusted Average Per Capita Cost (AAPCC): A county-level estimate of the average cost incurred by Medicare for each beneficiary in fee for service. Adjustments are made so that the AAPCC represents the level of spending that would occur if each county contained the same mix of beneficiaries. Before passage of the Balanced Budget Act of 1997, Medicare paid health plans 95 percent of the AAPCC, adjusted for the characteristics of the enrollees in each plan.

Adjusted Community Rate (ACR) Proposal: A process by which a health plan contracting with Medicare estimates the cost of providing services to its Medicare enrollees based on costs and revenues from its commercial business. Health plans estimate their ACRs annually and adjust the subsequent year's supplemental benefits or premiums offered so that they do not receive a higher rate of return on Medicare enrollees than they do on their commercial business.

Adverse Selection: Adverse selection occurs when a larger proportion of persons with poorer health status enroll in specific plans or insurance options, while a larger proportion of persons with better health status enroll in other plans or insurance options. Plans with a subpopulation with above-average costs are adversely selected. Plans with a subpopulation with below-average costs are favorably selected.

Aggregate Margin: A margin that compares revenues with expenses for a group of hospitals, rather than a single hospital. It is computed by subtracting the sum of expenses for all hospitals in the group from the sum of revenues and dividing by the sum of revenues. See PPS Inpatient Margin, PPS Operating Margin, Total Margin.

Allowed Charge: The amount Medicare approves for payment to a physician. Typically, Medicare pays 80 percent of the allowed charge and the beneficiary pays the remaining 20 percent. The allowed charge for a nonparticipating physician is 95 percent that of a participating physician. Nonparticipating physicians may bill beneficiaries for an additional amount above the allowed charge. See Balance Billing, Participating Physician and Supplier Program.

Ambulatory Patient Classifications (APC): A system for classifying outpatient services and procedures for purposes of payment. The APC system classifies some 7,000 services and procedures into about 300 procedure groups.

Ambulatory Surgical Center (ASC): A free-standing facility certified by Medicare that performs certain types of procedures on an outpatient basis.

Assignment (Medicare): A process under which Medicare pays its share of the allowed charge directly to the physician or supplier. Medicare will do this only if the physician accepts Medicare's allowed charge as payment in full (guarantees not to balance bill). Medicare provides other incentives to physicians who accept assignment for all patients under the Participating Physician and Supplier Program. See Balance Billing, Nonparticipating Physicians, Participating Physician, Participating Physician and Supplier Program.

Balance Billing: In Medicare and private fee-for-service health insurance, the practice of billing patients in excess of the amount approved by the health plan. Under Medicare fee for service, a balance bill cannot exceed 15 percent of the allowed charge for nonparticipating physicians. See Allowed Charge, Limiting Charge, Participating Physician.

Basic DRG Payment Rate: The payment rate a hospital will receive for a Medicare patient in a particular diagnosis-related group. The payment rate is calculated by adjusting the standardized amount to reflect wage rates in the hospital's geographic area (and cost of living differences unrelated to wages) and the costliness of the DRG. See Standardized Amount, Diagnosis-Related Groups.

Behavioral Offset: See Volume Offset.

Beneficiary: Someone who is eligible for or receiving benefits under an insurance policy or plan. The term is commonly applied to people covered by the Medicare or Medicaid programs.

Beneficiary Liability: The amount beneficiaries must pay providers for Medicare-covered services. Liabilities include copayments and coinsurance amounts, deductibles, and balance billing amounts.

Benefit Package: Services covered by a health insurance plan and the financial terms of such coverage, including cost sharing and limitations on amounts of services. See Cost Sharing.

Budget Neutrality: For the Medicare program, adjustment of payment rates when policies change so that total spending under the new rules is expected to be the same as it would have been under the previous payment rules.

Bundling: The use of a single payment for a group of related services.

Capital Costs: Depreciation, interest, leases and rentals, taxes, and insurance on tangible assets like physical plant and equipment.

Capitation: A health insurance payment mechanism that pays a fixed amount per person per time period to cover services. Capitation may be used by purchasers to pay health plans or by plans to pay providers. See Medicare Risk Contract, Medicare+Choice.

Carrier: A private contractor that administers claims processing and payment for Medicare Part B services. See Supplementary Medical Insurance.

Case Mix: The mix of patients treated within a particular institutional setting, such as the hospital. Patient classification systems like DRGs can be used to measure hospital case mix. See DRGs and Case-Mix Index.

Case-Mix Index (CMI): The average DRG weight for all cases paid under PPS. The CMI is a measure of the relative costliness of the patients treated in each hospital or group of hospitals. See DRG.

Charges: The posted prices of provider services.

Coinsurance: A type of cost sharing where the insured party and insurer share payment of the approved charge for covered services in a specified ratio after payment of the deductible by the insured. For example, for Medicare physicians' services, the beneficiary pays coinsurance of 20 percent of allowed charges. See Allowed Charge, Copayment, Cost Sharing, Deductible.

Competitive Bidding: A pricing method that elicits information on costs through a bidding process to establish payment rates that reflect the costs of an efficient health plan or health care provider.

Composite Rate: Payment by Medicare that covers the bundle of services, tests, drugs, and supplies routinely required for dialysis treatment.

Conversion Factor: The multiplicative factor used to translate relative value units into dollar amounts for physician payments under a fee schedule.

Conversion Factor Update: Annual percentage change to the conversion factor. For Medicare, the update is set by a formula to reflect medical inflation, changes in enrollment, growth in the economy, and changes in spending due to other changes in law. See Conversion Factor, Sustainable Growth Rate, Sustainable Growth Rate System, Volume Performance Standard System.

Copayment: A fixed dollar amount paid for a covered service by a health insurance enrollee. See Coinsurance and Deductible.

Cost Sharing: A general term referring to payments made by health insurance enrollees for covered services. Examples of cost sharing include deductibles, coinsurance, and copayments. See Balance Billing, Coinsurance, Copayment, Deductible.

Cost Shifting: Increasing revenues from some payers to offset losses and lower net payments from other payers.

Current Procedural Terminology (CPT): The coding system for physicians' services developed by the CPT Editorial Panel of the American Medical Association; basis of the HCFA Common Procedure Coding System.

Customary, Prevailing, and Reasonable (CPR): The method of paying physicians under Medicare from 1965 until implementation of the Medicare Fee Schedule in January 1992. Payment for a service was limited to the lowest of (1) the physician's billed charge for the service, (2) the physician's customary charge for the service, or (3) the prevailing charge for that service in the community. Similar to the usual, customary, and reasonable system used by private insurers. See Medicare Fee Schedule; Usual, Customary, and Reasonable.

Deductible: A type of cost sharing where the insured party pays a specified amount of approved charges for covered medical services before the insurer will assume liability for all or part of the remaining covered services. See Coinsurance, Copayment, Cost Sharing.

Diagnosis-Related Groups (DRGs): A system for determining case mix, used for payment under Medicare's PPS and by some other payers. The DRG system classifies patients into groups based on the principal diagnosis, type of surgical procedure, presence or absence of significant comorbidities or complications, and other relevant criteria. DRGs are intended to categorize patients into groups that are clinically meaningful and homogeneous with respect to resource use. Medicare's PPS currently uses almost 500 mutually exclusive DRGs, each of which is assigned a relative weight that compares its costliness to the average for all DRGs. See Case Mix.

Disproportionate Share (DSH) Adjustment: A payment adjustment under Medicare's PPS or under Medicaid for hospitals that serve a relatively large volume of low-income patients.

Dually Eligible: A Medicare beneficiary who also receives the full range of Medicaid benefits offered in his or her state.

Encounter Data: Description of the diagnoses made and services provided when a patient visits a health care provider under a managed-care plan. Encounter data provide much of the same information available on the bills submitted by fee-for-service providers.

Evaluation and Management (EM) Service: A nonprocedural service, such as a visit or consultation, provided by physicians to diagnose and treat diseases and counsel patients.

Excluded Hospitals and Distinct-Part Units: Specialty hospitals (rehabilitation, psychiatric, long-term care, children's, and cancer) and distinct-part units in general hospitals (rehabilitation and psychiatric) that are excluded from Medicare's hospital Inpatient PPS. Hospitals located in U.S. territories, federal hospitals, and Christian Science Sanatoria are also excluded from PPS. Excluded facilities are paid under cost-based reimbursement, subject to rate of increase limits. Rehabilitation facilities are slated to move to a prospective payment system in October 2000. Congress has also directed HCFA to develop a legislative proposal for a prospective payment system for long-term care facilities.

Favorable Selection: The result of enrolling in a health plan a disproportionate share of healthy individuals compared with the population from which the share is drawn. See Adverse Selection, Risk Adjustment, Risk Selection.

Federally Qualified Health Center (FQHC): A health center in a medically underserved area that is eligible to receive cost-based Medicare and Medicaid reimbursement.

Federally Qualified HMO: An HMO that has satisfied certain federal qualifications pertaining to organizational structure, provider contracts, health service delivery information, utilization review and quality assurance, grievance procedures, financial status, and marketing information, as specified in Title XIII of the Public Health Service Act. See Health Maintenance Organization.

Fee for Service: A method of paying health care providers for individual medical services rendered, as opposed to paying them salaries or capitated payments. See Capitation.

Fee Schedule: A list of predetermined payment rates for medical services. See Medicare Fee Schedule.

Fee Schedule Payment Area: A geographic area within which payment for a given service under the Medicare Fee Schedule does not vary. See Geographic Adjustment Factor.

Fiscal Intermediary: An entity, usually an insurance company, that has a contract with HCFA to determine and make Medicare payments for Part A and certain Part B benefits to hospitals and other providers of services and to perform related functions.

Fiscal Year: A 12-month period for which an organization plans the use of its funds, such as the federal government's fiscal year (October 1 to September 30). Fiscal years are referred to by the calendar year in which they end; for example, the federal fiscal year 1998 began October 1, 1997. Hospitals can designate their own fiscal years, and this is reflected in differences in the time periods covered by the Medicare Cost Reports. See PPS Year.

Five-Year Review: A review of the accuracy of Medicare's relative value scale that the Health Care Financing Administration is required to conduct every five years.

Functional Independence Measure - Function Related Group: A patient classification system developed for medical rehabilitation patients.

Geographic Practice Cost Index (GPCI): An index summarizing the prices of resources required to provide physicians' services in each payment area relative to national average prices. There is a GPCI for each component of the Medicare Fee Schedule: physician work, practice expense, and malpractice expense. The indexes are used to adjust relative value units to determine the correct payment in each fee schedule payment area. See Fee Schedule Payment Area, Medicare Fee Schedule.

Graduate Medical Education (GME): The period of medical training that follows graduation from medical school; commonly referred to as internship, residency, and fellowship training.

Gross Domestic Product (GDP): The total current market value of all goods and services produced domestically during a given period; differs from the gross national product by excluding net income that residents earn abroad.

Group-Model HMO: An HMO that pays a medical group a negotiated, per capita rate, which the group distributes among its physicians, often under a salaried arrangement. See Health Maintenance Organization, Independent Practice Association, Network-Model HMO, Staff-Model HMO.

HCFA Common Procedure Coding System (HCPCS): A coding system based on the American Medical Association's Current Procedural Terminology (CPT) coding system, expanded to accommodate additional services covered by Medicare.

Health Care Prepayment Plan (HCPP): A health plan with a Medicare cost contract to provide only Medicare Part B benefits. Some administrative requirements for these plans are less stringent than those of risk contracts or other cost contracts. See Medicare Cost Contract, Medicare Risk Contract.

Health Maintenance Organization (HMO): A type of managed-care plan that acts as both insurer and provider of a comprehensive set of health care services to an enrolled population. Benefits are typically financed through capitation with limited copayments, and services are furnished through a system of affiliated providers. See Group-Model HMO, Independent Practice Association, Managed Care, Network-Model HMO, Staff-Model HMO.

Health Plan: An organization that acts as insurer for an enrolled population. See Fee for Service, Managed Care.

Health Plan Employer Data and Information Set (HEDIS): A set of standardized measures of health plan performance. HEDIS allows comparisons between plans on quality, access, and patient satisfaction; membership and utilization; financial information; and health plan management. HEDIS was developed by employers, HMOs, and the National Committee for Quality Assurance.

Health Professional Shortage Area (HPSA): An urban or rural geographic area, a population group, or a public or nonprofit private medical facility that the Secretary of Health and Human Services determines is being served by too few health professionals. Physicians who provide services in HPSAs qualify for a Medicare bonus payment.

Hierarchical Coexisting Conditions Model (HCC): A risk-adjustment model that groups beneficiaries based on their diagnoses.

Hospital Inpatient Prospective Payment System (PPS): Medicare's method of paying acute care hospitals for inpatient care. Prospective per case payment rates are set at a level intended to cover operating costs for treating a typical inpatient in a given DRG. Payments for each hospital are adjusted for differences in area wages, teaching activity, care to the poor, and other factors. Hospitals may also receive additional payments to cover extra costs associated with atypical patients (outliers) in each DRG. Capital costs, originally excluded from PPS, are being phased into the system. By 2001, capital payments will be made on a fully prospective, per case basis. Prospective payment systems are also being developed for Medicare payments for home health services, outpatient hospital services, skilled nursing facilities, and rehabilitation facilities. See Capital Costs, Diagnosis-Related Groups, Outliers, Prospective Payment.

Hospital Insurance (HI): The part of the Medicare program that covers the cost of hospital and related post-hospital services. Eligibility is normally based on prior payment of payroll taxes. Beneficiaries are responsible for an initial deductible per spell of illness and copayments for some services. Also called Part A coverage or benefits.

Indirect Medical Education (IME) Adjustment: A payment adjustment applied to DRG and outlier payments under PPS for hospitals that operate an approved graduate medical education program. For operating costs, the adjustment is based on the hospital's ratio of interns and residents to the number of beds. For capital costs, it is based on the hospital's ratio of interns and residents to average daily occupancy.

Instrumental Activities of Daily Living (IADL): An index or scale that measures a patient's degree of independence in aspects of cognitive and social functioning, including shopping, cooking, doing housework, managing money, and using the telephone.

Integrated Delivery System (IDS): An entity that usually includes a hospital, a large medical group, and an insurance vehicle such as an HMO or PPO. Typically, all provider revenues flow through the organization.

Intensity of Services: The number and complexity of resources used in producing a patient care service, such as a hospital admission or home health visit. Intensity of services reflects, for example, the amount of nursing care, diagnostic procedures, and supplies furnished.

International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM): A diagnosis and procedure classification system designed to facilitate the collection of uniform and comparable health information. This system is used to group patients into DRGs.

Limiting Charge: The maximum amount that a nonparticipating physician is permitted to charge a Medicare beneficiary for a service; in effect, a limit on balance billing. Starting in 1993 the limiting charge has been set at 115 percent of the Medicare-allowed charge. See Allowed Charge, Balance Billing, Nonparticipating Physician.

Locality (Medicare): See Fee Schedule Payment Area.

Major Teaching Hospitals: Hospitals with an approved graduate medical education program and a ratio of interns and residents to beds of 0.25 or greater. See Other Teaching Hospitals, Indirect Medical Education Adjustment.

Malpractice Expense: The cost of professional liability insurance incurred by physicians. A component of the Medicare relative value scale. See Relative Value Scale.

Managed Care: Any system of health service payment or delivery arrangements where the health plan attempts to control or coordinate use of health services by its enrolled members in order to contain health expenditures, improve quality, or both. Arrangements often involve a defined delivery system of providers with some form of contractual arrangement with the plan. See Health Maintenance Organization, Independent Practice Association, Preferred Provider Organization.

Market Basket Index: An index of the annual change in the prices of goods and services providers use for producing health services. There are separate market baskets for PPS hospital operating and capital inputs; PPS-excluded facility operating inputs; and SNF, home health agency, and renal dialysis facility operating and capital inputs.

Medicare: A health insurance program for people over 65, those eligible for Social Security disability payments, and those who need kidney dialysis or transplants. See Hospital Insurance, Supplementary Medical Insurance.

Medicare+Choice: A program created by the Balanced Budget Act of 1997 to replace the existing system of Medicare risk and cost contracts. Beneficiaries will have the choice during an open season each year to enroll in a Medicare+Choice plan or to remain in traditional Medicare. Medicare+Choice plans may include coordinated care plans (HMOs, PPOs, or plans offered by provider-sponsored organizations); private fee-for-service plans; or plans with medical savings accounts.

Medicare Choices Demonstration: A demonstration project designed to offer flexibility in contracting requirements and payment methods for Medicare's managed-care program. Participating plans include PSOs and PPOs. Plans are required to submit encounter data to HCFA, and most will test new risk-adjustment methods.

Medicare Cost Contract: A contract between Medicare and a health plan under which the plan is paid on the basis of reasonable costs to provide some or all Medicare-covered services for enrollees. See Health Care Prepayment Plan, Medicare Risk Contract.

Medicare Cost Report: An annual report required of institutions participating in the Medicare program. Records each institution's total costs and charges associated with providing services to all patients, the portion of those costs and charges allocated to Medicare patients, and the Medicare payments received.

Medicare Current Beneficiary Survey (MCBS): A longitudinal survey administered by HCFA that provides information on specific aspects of beneficiary access, utilization of services, expenditures, health insurance coverage, satisfaction with care, health status and physical functioning, and demographic information.

Medicare Economic Index (MEI): An index that tracks changes over time in physician practice costs. From 1975 through 1991, increases in prevailing charge screens were limited to increases in the MEI.

Medicare Fee Schedule: The resource-based fee schedule Medicare uses to pay for physicians' services. See Resource-Based Relative Value Scale, Conversion Factor, Geographic Practice Cost Index.

Medicare Risk Contract: A contract between Medicare and a health plan under which the plan receives monthly capitated payments to provide Medicare-covered services for enrollees, and thereby assumes insurance risk for those enrollees. A plan is eligible for a risk contract if it is a federally qualified HMO or a competitive medical plan. See Adjusted Average Per Capita Cost, Adjusted Community Rate, Medicare Cost Contract.

Medigap Insurance: Privately purchased individual or group health insurance policies designed to supplement Medicare coverage. Benefits may include payment of Medicare deductibles, coinsurance, and balance bills, as well as payment for services not covered by Medicare. Medigap insurance must conform to one of 10 federally standardized benefit packages.

National Claims History System: A HCFA data reporting system that combines both Part A and Part B claims in a common file. The National Claims History system became fully operational in 1991.

Network-Model HMO: An HMO that contracts with several different medical groups, often at a capitated rate. Groups may use different methods to pay their physicians. See Group-Model HMO, Health Maintenance Organization, Independent Practice Association, Staff-Model HMO.

Nominal Value: Measurement of an economic amount in terms of current prices. See Real Value.

Nonparticipating Physician: A physician who does not sign a participation agreement and, therefore, is not obligated to accept assignment on all Medicare claims. See Assignment, Participating Physician, Participating Physician and Supplier Program.

Nursing Facility: An institution that provides skilled nursing care and rehabilitation services to injured, functionally disabled, or sick persons. Formerly, distinctions were made between intermediate care facilities and skilled nursing facilities. The Omnibus Budget Reconciliation Act of 1987 eliminated this distinction effective October 1, 1990, by requiring all nursing facilities to meet SNF certification requirements. See Skilled Nursing Facility.

Other Teaching Hospitals: Hospitals with approved graduate medical education program and a ratio of interns and residents to beds of less than 0.25. See Indirect Medical Education Adjustment, Major Teaching Hospitals.

Out-of-Pocket Expenditures: Health-related expenditures for which beneficiaries are financially liable. For Medicare beneficiaries, the total amount includes cost sharing for Medicare-covered services (for example, deductibles, copayments, and balance bills); the cost of Medicare Part B and private health insurance premiums; and the cost of noncovered services. See Cost Sharing, Balance Billing, Coinsurance, Copayment, Deductible.

Outliers: Cases that are substantially different from the rest of the population. With regard to hospital payment, these are classified as cases with extremely long lengths of stay (day outliers) or extraordinarily high costs (cost outliers) compared with others in the same DRG. Hospitals receive additional PPS payments for these cases.

Paid Amount: The portion of a submitted charge that is actually paid by both third-party payers and the insured, including copayments and balance bills. For Medicare this amount may be less than the allowed charge if the submitted charge is less, or it may be more because of balance billing. See Allowed Charge, Balance Billing, Payment Rate, Submitted Charge.

Participating Physician: A physician who signs a participation agreement, agreeing to accept assignment on all Medicare claims for one year. See Assignment.

Participating Physician and Supplier Program (PAR): A program that provides financial and administrative incentives for physicians and suppliers to agree in advance to accept assignment on all Medicare claims for a one-year period. See Assignment.

Payment Rate: The total amount paid for each unit of service rendered by a health care provider, including both the amount covered by the insurer and the insured person's cost sharing; sometimes referred to as payment level. Also used to refer to capitation payments to health plans. See Allowed Charge.

Per Diem Payment: Fixed daily payments that do not vary with the level of services used by the patient.

Physician Work: A measure of the physician's time, physical effort and skill, mental effort and judgment, and stress associated with providing a medieal serviee. A component of the resouree-based relative value scale. See Relative Value Scale.

Point-of-Service (POS) Plan: A managed-care plan that combines features of both prepaid and fee-for-service insurance. Health plan enrollees decide whether to use network or nonnetwork providers at the time care is needed and usually are charged sizable copayments for selecting the latter. See Health Plan, Health Maintenance Organization, Preferred Provider Organization.

PPS Inpatient Margin: A measure that compares PPS operating and capital payments with Medicare-allowable inpatient operating and capital costs. Calculated by subtracting total Medicare-allowable inpatient operating and capital costs from total PPS operating and eapital payments and dividing by total PPS operating and capital payments. See PPS Operating Margin.

PPS Operating Margin: A measure that compares PPS inpatient operating payments with Medieare-allowable inpatient operating costs. This measure excludes Medicare costs and payments for capital, direct medical education, organ acquisition, and other eategories not included among Medicare-allowable inpatient operating costs. Calculated by subtracting total Medicare-allowable inpatient operating costs from total PPS inpatient operating payments and dividing by total PPS inpatient operating payments. See PPS Inpatient Margin.

PPS Year: A designation referring to hospital cost reporting periods that begin during a given federal fiscal year, reflecting the number of years since the initial implementation of PPS. For example, PPS 1 refers to hospital fiscal years beginning in federal fiscal year 1984. For a hospital with a fiscal year beginning July 1, PPS 1 covers the period from July 1, 1984 through June 30, 1985.

Practice Expense: The cost of nonphysieian resources incurred by the physician to provide services. Examples are salaries and fringe benefits received by the physician's employees, and the expenses associated with the purchase and use of medical equipment and supplies in the physician's office. A component of the Medicare relative value scale. See Relative Value Scale.

Practice Expense Relative Value: A value that reflects the average amount of practice expenses incurred in performing a particular service. All values are expressed relative to the practice expenses for a reference service whose value equals one praetice expense unit. See Relative Value Scale.

Preferred Provider Organization (PPO): A managed-care plan that contracts with networks or panels of providers to furnish services and be paid on a negotiated fee schedule. Enrollees are offered a financial incentive to use providers on the preferred list, but may use nonnetwork providers as well. See Managed Care.

Premium: An amount paid periodically to purchase health insurance benefits.

Productivity: The ratio of outputs (goods and services produced) to inputs (resourees used in production). Increased productivity implies that an organization is producing more output with the same resources or the same output with fewer resourees.

Professional Liability Insurance (PLI): The insurance physicians purchase to help protect themselves from the financial risks associated with medical liability claims.

Program of All-Inclusive Care for the Elderly (PACE): First established as a HCFA demonstration program that uses managed care to serve frail elderly persons who have been assessed as eligible for nursing home placement and are, for the most part, dually eligible for Medicare and Medicaid. The program provides adult day health care and case management in addition to Medicare and Medicaid benefits to help the program participant maintain independent living in the community. The BBA made PACE a permanent program and began a new demonstration for for-profit sponsors of PACE sites.

Prospective Payment: A method of paying health care providers in which rates are established in advance. Providers are paid these rates regardless of the costs they actually incur.

Real Value: Measurement of an economic amount corrected for change in price over time (inflation), thus expressing a value in terms of constant prices. See Nominal Value.

Relative Value: A value that reflects a comparison with a standard. See Relative Value Scale.

Relative Value Scale (RVS): An index that assigns weights to each medical service; the weights represent the relative amount to be paid for each service. The RVS used in the Medicare Fee Schedule consists of three components: physician work, practice expense, and malpractice expense. See Malpractice Expense, Medicare Fee Schedule, Physician Work, Practice Expense, Resource-Based Relative Value Scale.

Relative Value Unit (RVU): The unit of measure for a relative value scale. RVUs must be multiplied by a dollar conversion factor to establish payment amounts. See Conversion Factor, Relative Value, Relative Value Scale.

Resource-Based Relative Value Scale (RBRVS): A relative value scale based on the resources involved in providing a service. See Relative Value Scale.

Revenue Share: The proportion of total revenue devoted to a particular type of expense. For example, the practice expense revenue share is that proportion of revenue used to pay for practice expense.

Risk Adjuster: A measure used to adjust payments in order to compensate for spending that is expected to be lower or higher than average, based on the health status or demographic characteristics of enrollees.

Risk Adjustment: The process used to adjust payments to plans to compensate for differences in health status of enrollees across plans.

Risk Contract: See Medicare Risk Contract.

Risk Selection: Any situation in which health plans differ in the health risk associated with their enrollees because of enrollment choices made by the plans or enrollees. As a result, one health plan's expected costs differ from another's due to underlying differences in their enrolled populations. See Adverse Selection, Favorable Selection.

Risk Sharing: A method, such as outlier payments, that places a health plan at less than full risk by covering the cost of selected services, providing additional payment amounts for high cost patients or to offset plan losses.

Rural Referral Center: Generally large rural hospitals that Medicare designates as serving patients referred by other hospitals or by physicians who are not members of the hospital's medical staff.

Secondary Insurance: Any insurance that supplements Medicare coverage. The three main sources for secondary insurance are employers, privately purchased Medigap policies, and Medicaid.

Site-of-Service Differential: The difference in the amount paid to the physician when the same service is performed in different practice settings, for example, a colonoscopy in a physician's office or a hospital clinic.

Skilled Nursing Facility (SNF): An institution that has a transfer agreement with one or more hospitals, provides primarily inpatient skilled nursing care and rehabilitative services, and meets other specific certification requirements. See Nursing Facility.

Standardized Amount: An amount used as the basis for payment under PPS. It is intended to represent the national average operating cost of inpatient treatment for a typical Medicare patient in a reasonably efficient hospital in a large urban or other area. Standardized amounts are based on Medicare costs reported by hospitals for cost reporting periods ending in 1982, adjusted for geographic location and certain hospital characteristics, such as teaching activity. The adjusted amounts are updated to the year of payment by an annual update factor.

Submitted Charge: The charge submitted by a provider to the patient or a payer. See Paid Amounts.

Supplementary Medical Insurance (SMI): The part of the Medicare program that covers the costs of physicians' services, outpatient laboratory and X-ray tests, durable medical equipment, outpatient hospital care, and certain other services. This voluntary program requires payment of a monthly premium, which covers 25 percent of program costs, with the rest covered by general revenues. Beneficiaries are responsible for a deductible and coinsurance payments for most covered services. Also called Part B coverage or benefits.

Supplier: A provider of health care services, other than a practitioner, that is permitted to bill under Medicare Part B. Suppliers include independent laboratories, durable medical equipment providers, ambulance services, orthotists, prosthetists, and portable X-ray providers.

Sustainable Growth Rate: The target rate of expenditure growth set by the sustainable growth rate system. Similar to the performance standard under the previous volume performance standard system, except that the target depends on growth of gross domestic product instead of historical trends. See Sustainable Growth Rate System, Volume Performance Standard System.

Sustainable Growth Rate System: A revision to the volume performance standard system, enacted as part of the Balanced Budget Act of 1997. This system is the mechanism for setting fee updates for the Medicare Fee Schedule. It uses a single conversion factor, bases target rates of growth on growth of gross domestic product, and changes the previous method for calculating the conversion factor update to eliminate the two- year delay. See Volume Performance Standard System, Conversion Factor Update.

Swing-Bed Hospital: A hospital participating in the Medicare swing-bed program. This program allows rural hospitals with fewer than 100 beds to provide post-acute care services in acute care beds.

Tax Equity and Fiscal Responsibility Act of 1982 (TEFRA): Legislation that, among other things, established limits on reimbursements for hospital inpatient operating costs per Medicare discharge. A facility's limit is derived from its costs in a base year updated to the current year by an annual update factor. Medicare payments for operating costs generally may not exceed the facility's limit. These provisions apply generally to hospitals and units excluded from PPS. See Excluded Hospitals and Distinct-Part Units.

Total Margin: A measure that compares total hospital revenues with expenses for inpatient, outpatient, and nonpatient care activities. The total margin is calculated by subtracting total expenses from total revenues and dividing by total revenues.

Uncompensated Care: Care rendered by hospitals or other providers without payment from the patient or a government-sponsored or private insurance program. It includes both charity care, which is furnished without the expectation of payment, and bad debts, for which the provider has made an unsuccessful effort to collect payment due from the patient.

Update Factor: The year-to-year increase in base payment amounts for PPS hospitals and dialysis facilities, and in the target amounts for PPS-excluded hospitals and units. MedPAC's annual update recommendations are intended to reflect changes in the prices of inputs used to provide patient care services as well as changes in productivity, technological advances, quality of care, and long-term cost effectiveness of services. See Market Basket Index.

Usual, Customary, and Reasonable: A method used by private insurers for paying physicians based on charges commonly used by physicians in a local community. Sometimes called customary, prevailing, and reasonable charges. See Customary, Prevailing, and Reasonable.

Volume and Intensity of Services: The quantity of health care services per enrollee, taking into account both the number and the complexity (or mix) of the services provided.

Volume Offset: The change in the number and mix of services that is projected to occur in response to a change in fees. A 50 percent behavioral offset means that half the savings from fee reductions will be offset by increased volume and intensity of services. Used to estimate budget effects for Medicare payment changes. Also referred to as behavioral offset.

Volume Performance Standard (VPS) System: Recently replaced mechanism to adjust fee updates for the Medicare Fee Schedule based on how annual increases in actual expenditures compare with previously determined performance standard rates of increase. See Sustainable Growth Rate System.

Work Relative Value: A value that reflects the average amount of physician work incurred in performing a particular service, relative to that of other services. See Relative Value Scale.

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